MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

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P. O. M. Cain

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA

DIVISION OF HEALTH SCIENCES LIBRARY

EIGHTY-SECOND ANNUAL SESSION

HELD AT

PINEHURST, NORTH CAROLINA

May 6-7-8, 1935

President
P. P. McCAIN, M.D., F.A.C.P., Sanatorium

Secretary-Treasurer
L. B. McBRAYER, M.D., F.A.C.P., Southern Pines

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"It is understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the Transactions of the Society."

—*Extract from By-Laws, Chapter 10, Section 8.*

EARLY HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1804

Date	Place	President	Vice-Presidents	Corresponding Secretary	Secretary	Recording Secretary	Treasurer	Censors
Dec. 17, 1799, or April 16, 1800	Raleigh	Richard Fenner	Nathaniel Loomis John Claiborne	Calvin Jones		Wm. B. Hill	Cargill Massenburg	Sterling Wheaton James Webb Jas. John Pasteur Jason Hand
Dec. 1, 1800	Raleigh	Richard Fenner			Sterling Wheaton			
Dec. 1, 1801	Raleigh	John C. Osborne	Thomas Mitchell Richard Fenner	Calvin Jones	Sterling Wheaton		Cargill Massenburg	James Webb John Sibley
1802	Raleigh	John C. Osborne		Calvin Jones				
1803	Raleigh	John C. Osborne		Calvin Jones				
1804	Raleigh	John C. Osborne		Calvin Jones				

HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM 1849 TO 1934

*Missing Data Not to be Found in Record

	Date	Place of Meeting	Number in Attendance	President	Vice-Presidents*	Secretary	Treasurer*	Members on Roll*	Honorary Members*	Honorary Fellows*
	1849	Raleigh	25	F. J. Hill		W. H. McKee		25		
1	1850	Raleigh	21	E. Strudwick	F. J. Haywood, C. E. Johnson, J. E. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill	38	9	
2	1851	Raleigh	23	E. Strudwick	C. E. Johnson.	W. H. McKee	W. G. Hill	46	0	
3	1852	Wilmington	38	J. E. Williamson	Thomas N. Cameron, William G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker	72	12	
4	1853	Fayetteville	24	J. E. Williamson	William G. Hill, Johnson B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Dupree	80	14	
5	1854	Raleigh	37	J. H. Dickson	N. J. Pittman, J. B. G. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree	84	17	
6	1855	Salisbury	23	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn	96	18	
7	1856	Raleigh	35	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn	101	22	
8	1857	Edenton	25	C. E. Johnson	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas	J. B. Dunn	113	16	
9	1858	New Bern	69	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn	172	18	
10	1859	Statesville	81	W. H. McKee	James G. Ramsey, P. E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas	C. W. Graham			
11	1860	Washington	64	N. J. Pittman	P. T. Henry, R. H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham	233	18	
12	1861	Morganton	23	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham	244	18	
13	1866	Raleigh	20	J. J. Summerell	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	W. G. Thomas	C. W. Graham			
14	1867	Tarboro	41	W. G. Thomas		S. S. Satchwell	C. W. Graham	288	11	
15	1868	Warrenton	27	S. S. Satchwell	Hugh Kelly, George A. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones			
16	1869	Salisbury	36	E. B. Haywood	Thomas E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones			
17	1870	Wilmington	38	C. J. O'Hagan	E. A. Anderson, F. N. Luckey, W. R. Sharpe, R. L. Payne.	Thomas F. Wood	J. W. Jones			
18	1871	Raleigh	35	Hugh Kelley	D. N. Patterson, R. C. Pearson, J. B. Seavy, G. L. Kirby.	Thomas F. Wood	J. W. Jones			
19	1872	New Bern	34	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcom.	James McKee	J. W. Jones			

20	1873	Statesville	43	M. Whitehead	W. T. Ennett, William Little, Charles Duffy, P. T. Jerman.	James McKee	H. T. Bahnson			
21	1874	Charlotte	56	W. A. B. Norcom	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	James McKee	H. T. Bahnson			
22	1875	Wilson	60	J. W. Jones	Walker Debnam, J. A. Gibson, William Little, D. N. Patterson.	James McKee	H. T. Bahnson	148	5	
23	1876	Fayetteville	33	Peter E. Hines	J. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee	H. T. Bahnson	157	4	
24	1877	Salem	42	George A. Foote	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill.	James McKee	A. G. Carr	177	4	
25	1878	Goldsboro	79	R. L. Payne	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot	A. G. Carr	194	6	
26	1879	Greensboro	109	Chas. Duffy, Jr.	J. A. Gibson, Willis Alston, James McKee, A. A. Hill.	L. J. Picot	A. G. Carr	198	6	
27	1880	Wilmington	105	J. F. Shaffner	J. K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J. Picot	A. G. Carr	225	6	
28	1881	Asheville	92	R. B. Haywood	J. E. McRee, W. H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot	A. G. Carr	254	6	
29	1882	Concord	65	Thos. F. Wood	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot	A. G. Carr	297	7	
30	1883	Tarboro	112	J. K. Hall	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot	A. G. Carr	310	7	
31	1884	Raleigh	112	A. B. Pierce	F. W. Potter, G. W. Graham, R. Dillard, G. W. Long.	L. J. Picot	A. G. Carr	348	7	
32	1885	Durham	173	W. C. McDuffie	James McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy	R. L. Payne, Jr.	424	6	
33	1886	New Bern	113	Joseph Graham	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	J. M. Baker	R. L. Payne, Jr.	438	7	
34	1887	Charlotte	112	H. T. Bahnson	G. G. Smith, J. L. Nicholson, C. M. Van Poole, H. B. Ferguson.	J. M. Baker	R. L. Payne, Jr.	452	7	
35	1888	Fayetteville	133	T. D. Haigh	W. T. Ennett, J. A. Dunn, T. E. Anderson.	J. M. Baker	C. M. Van Poole	306	6	
36	1889	Elizabeth City	50	W. T. Ennett	W. J. Jones, S. W. Stevenson, G. W. Long.	J. M. Baker	C. M. Van Poole	410	6	
37	1890	Oxford	160	G. G. Thomas	R. L. Payne, Jr., Richard Dillard, S. D. Booth.	J. M. Hays	C. M. Van Poole	414	6	
38	1891	Asheville	135	R. H. Lewis	S. W. Battle, J. L. Nicholson, W. H. Lilly.	J. M. Hays	C. M. Van Poole	422	6	
39	1892	Wilmington	162	W. T. Cheatham	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M. Hays	C. M. Van Poole	431	6	
40	1893	Raleigh	221	J. W. McNeill	W. C. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett	M. P. Perry	447	5	3
41	1894	Greensboro	166	W. H. H. Cobb	J. A. Hodges, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett	M. P. Perry	454	5	3
42	1895	Goldsboro		J. H. Tucker	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett	M. P. Perry	436	7	3
43	1896	Winston-Salem	158	R. L. Payne	S. D. Booth, J. P. Munroe, J. A. Burroughs, J. E. Grimsley.	R. D. Jewett	M. P. Perry	452	7	3

HISTORY OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM 1849 TO 1934
*Missing Data Not to be Found in Record

Date		Place of Meeting	Number in Attendance	President	Vice-Presidents*	Secretary	Treasurer*	Members on Roll*	Honorary Members*	Honorary Fellows*
44	1897	Morehead City	103	P. L. Murphy	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett	M. P. Perry	406	6	3
45	1898	Charlotte	*	Francis Duffy	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell.	R. D. Jewett	M. P. Perry	437	6	21
46	1899	Asheville	152	L. J. Picot	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	Geo. W. Presley	G. T. Sikes	489	6	16
47	1900	Tarboro	115	George W. Long	C. M. Van Poole, James M. Parrott, T. B. Williams, W. D. Hillard	Geo. W. Presley	G. T. Sikes	482	6	21
48	1901	Durham	186	Julian M. Baker	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	Geo. W. Presley	G. T. Sikes	515	5	18
49	1902	Wilmington	147	Robert S. Young	A. G. Carr, E. D. Dixon-Carroll, I. M. Taylor, J. M. Parrott.	Geo. W. Presley	G. T. Sikes	546	5	20
50	1903	Hot Springs	155	A. W. Knox	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L. Nicholson.	J. Howell Way	G. T. Sikes	530	6	19
51	1904	Raleigh	326	H. B. Weaver	John Hey Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way	G. T. Sikes	1,033	8	17
52	1905	Greensboro	361	David T. Tayloe	C. A. Julian, John T. Burrus, I. W. Faison.	J. Howell Way	G. T. Sikes	1,175	8	17
53	1906	Charlotte	406	E. C. Register	L. B. McBrayer, W. H. Cobb, Jr., W. O. Spencer.	J. Howell Way	G. T. Sikes	1,234	8	16
54	1907	Morehead City	217	Samuel D. Booth	C. M. Strong, J. E. McLaughlin, W. F. Hargrove.	David A. Stanton	H. McK. Tucker	888	7	16
55	1908	Winston-Salem	372	J. Howell Way	J. E. Stokes, J. A. Turner, W. H Dixon.	David A. Stanton	H. McK. Tucker	998	7	28
56	1909	Asheville	337	J. F. Highsmith	C. M. Van Poole, D. A. Garrison, D. O. Dees.	David A. Stanton	H. McK. Tucker	1,067	7	25
57	1910	Wrightsville Beach	276	J. A. Burroughs† E. J. Wood	E. J. Wood, John Q. Myers, L. D. Wharton.	David A. Stanton	H. D. Walker	1,080	8	35
58	1911	Charlotte	412	C. M. Van Poole	J. V. McGougan, W. E. Warren, L. N. Glenn.	David A. Stanton	H. D. Walker	880	8	45
59	1912	Hendersonville	296	A. A. Kent	J. P. Munroe, W. P. Horton, J. G. Murphy.	David A. Stanton	H. D. Walker	950	8	44
60	1913	Morehead City	232	J. P. Munroe	F. R. Harris, E. S. Bullock, L. B. Morse.	John A. Ferrell	H. D. Walker	1,133	8	40
61	1914	Raleigh	431	J. M. Parrott	E. T. Dickinson, J. T. J. Battle, D. E. Sevier.	John A. Ferrell	H. D. Walker	1,228	8	47
62	1915	Greensboro	443	L. B. McBrayer	J. J. Phillips, C. W. Moseley, S. M. Crowell.	John A. Ferrell	H. D. Walker	1,221	9	68

†Died during his term of office; succeeded by E. J. Wood, first vice-president.

63	1916	Durham	406	M. H. Fletcher	J. L. Nicholson, L. N. Glenn, W. H. Hardison.	Benj. K. Hays	W. M. Jones	1,228	10	79
64	1917	Asheville	280	Charles O'H. Laughinghouse	D. J. Hill, J. L. Spruill, J. H. Shuford.	Benj. K. Hays	W. M. Jones	1,271	11	81
65	1918	Pinehurst	291	I. W. Faison	Wm. deB. MacNider, Jos. B. Greene, Ben F. Royal.	Benj. K. Hays	W. M. Jones	1,087	11	81
						Sec-Treas	Acting Sec.-Treas.			
66	1919	Pinehurst	335	Cyrus Thompson	J. W. Halford, T. W. Davis, A. McN. Blair.	Benj. K. Hays	L. B. McBrayer	1,306	11	100
67	1920	Charlotte	479	C. V. Reynolds	H. D. Walker, F. Stanley Whitaker, Thomas I. Fox.	Benj. K. Hays	L. B. McBrayer	1,497	12	100
68	1921	Pinehurst	404	T. E. Anderson	C. S. Lawrence, W. H. Ward, J. M. Manning.	Benj. K. Hays	L. B. McBrayer	1,491	12	93
							Sec.-Treas.			
69	1922	Winston-Salem	507	H. A. Royster	W. T. Parrott, B. C. Nalle, J. R. McCracken.		L. B. McBrayer	1,571	12	100
70	1923	Asheville	356	J. W. Long	F. M. Hanes, T. C. Johnson, B. L. Long.		L. B. McBrayer	1,592	9	101
71	1924	Raleigh	525	J. V. McGougan	J. L. Spruill, ‡Eugene B. Glenn, D. A. Garrison.		L. B. McBrayer	1,604	9	106
72	1925	Pinehurst	550	Albert Anderson	W. L. Dunn, A. E. Bell, K. G. Averitt.		L. B. McBrayer	1,657	10	116
73	1926	Wrightsville Beach	445	Wm. deB. MacNider	J. P. Matheson, W. W. Dawson, H. H. Bass.		L. B. McBrayer	1,663	10	107
74	1027	Durham	653	John Q. Myers	J. W. Carroll, A. Y. Linville, C. H. Cocke.		L. B. McBrayer	1,691	10	121
75	1928	Pinehurst	611	John T. Burrus	G. H. Macon, R. F. Leinbach, W. R. Griffin.		L. B. McBrayer	1,738	11	143
76	1929	Greensboro	671	Thurman D. Kitchin	Dr. W. L. Dunn,* Asheville, Dr. D. T. Tayloe, Jr., Washington, Dr. W. D. James, Hamlet.		L. B. McBrayer	1,666	11	146
77	1930	Pinehurst	701	L. A. Crowell	W. B. Murphy, Wm. E. Warren, N. B. Adams.		L. B. McBrayer	1,711	11	155
					President-Elect	Vice-Presidents				
78	1931	Durham	714	J. G. Murphy	M. L. Stevens	C. A. Julian, Greensboro J. W. Davis, Statesville	L. B. McBrayer	1,600	10	164
79	1932	Winston-Salem	740	M. L. Stevens	Jno. B. Wright	C. W. Banner, Greensboro W. W. Sawyer, Elizabeth City	L. B. McBrayer	1,559	10	166
80	1933	Raleigh	714	Jno. B. Wright	I. H. Manning	J. R. McCracken, Waynesville W. G. Suiter, Weldon	L. B. McBrayer	1,363	10	181
81	1934	Pinehurst	728	I. H. Manning	P. P. McCain	R. L. Felts, Durham H. D. Walker, Elizabeth City	L. B. McBrayer	1,563	10	210
82	1935	Pinehurst	706	P. P. McCain	Paul H. Ringer	J. F. McKay, Buie's Creek William Allen, Charlotte	L. B. McBrayer	1,619	10	215

* Died during term of office.

ROSTER OF MEMBERS OF THE VARIOUS BOARDS OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA

FIRST BOARD

JAMES H. DICKSON, Wilmington 1859-1866
CHARLES E. JOHNSON, Raleigh 1859-1866
CALEB WINSLOW, Hertford 1859-1866
OTIS F. MANSON, Townsville 1859-1866
WILLIAM H. McKEE, Raleigh 1859-1866
CHRISTOPHER HAPPOLDT, Morganton 1859-1866
J. GRAHAM TULL, New Bern 1859-1866
SAMUEL T. IREDELL, Secretary 1859-1866

SECOND BOARD

N. J. PITTMAN, Tarboro 1866-1872
E. BURKE HAYWOOD, Raleigh 1866-1872
R. H. WINBORNE, Edenton 1866-1872
S. S. SATCHWELL, Rocky Point 1866-1872
J. J. SUMMERELL, Salisbury 1866-1872
R. B. HAYWOOD, Raleigh 1866-1872
M. WHITEHEAD, Salisbury 1866-1872
J. F. SHAFFNER, Salem 1866-1872
WILLIAM LITTLE, Secretary 1866-1867
THOMAS F. WOOD, Secretary, Wilmington 1867-1872

THIRD BOARD

CHARLES J. O'HAGAN, Greenville 1872-1878
W. A. B. NORCOM, Edenton 1872-1878
C. TATE MURPHY, Clinton 1872-1878
GEORGE A. FOOTE, Warrenton 1872-1878
J. W. JONES, Tarboro 1872-1878
R. L. PAYNE, Lexington 1872-1878
CHARLES DUFFY, JR., Secretary, New Bern 1872-1878

FOURTH BOARD

PETER E. HINES, Raleigh 1878-1884
THOMAS D. HAIGH, Fayetteville 1878-1884
GEORGE L. KIRBY, Goldsboro 1878-1884
THOMAS F. WOOD, Wilmington 1878-1884
JOSEPH GRAHAM, Charlotte 1878-1884
[1]ROBERT I. HICKS, Williamston 1878-1880
[2]RICHARD H. LEWIS, Raleigh 1880-1884
HENRY T. BAHNSON, Secretary, Salem 1878-1884

FIFTH BOARD

WILLIAM R. WOOD, Scotland Neck 1884-1890
AUGUSTUS W. KNOX, Raleigh 1884-1890
FRANCIS DUFFY, New Bern 1884-1890
PATRICK L. MURPHY, Morganton 1884-1890
WILLIS ALSTON, Littleton 1884-1890
J. A. REAGAN, Weaverville 1884-1890
W. J. H. BELLAMY, Secretary, Wilmington 1884-1890

SIXTH AND SEVENTH BOARDS

R. L. PAYNE, JR., Lexington 1890-1892
GEORGE W. PUREFOY, Asheville 1890-1892
GEORGE G. THOMAS, Wilmington 1890-1894
ROBERT S. YOUNG, Concord 1890-1894
WILLIAM H. WHITEHEAD, Rocky Mount 1890-1896
GEORGE W. LONG, Graham 1890-1896
L. J. PICOT, Secretary, Littleton 1890-1896
JULIAN M. BAKER, Tarboro 1892-1898
H. B. WEAVER, Secretary, Asheville 1892-1898
[3]J. M. HAYS, Greensboro 1894-1897
[4]KEMP P. BATTLE, JR., Raleigh 1897-1900

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[1]Resigned before expiration of term.
[2]Elected for unexpired term of Dr. Hicks.
[3]Died before the expiration of his term.
[4]Elected to serve unexpired term of Dr. Hays.

[1]THOMAS S. BURBANK, Wilmington....1894-1898
[2]WILLIAM H. H. COBB, Goldsboro....1898-1900
[1]RICHARD H. WHITEHEAD, Chapel Hill....1896-1898
[3]J. HOWELL WAY, Secretary, Waynesville....1898-1902
DAVID T. TAYLOE, Washington....1896-1902
THOMAS E. ANDERSON, Secretary, Statesville....1896-1902
[4]ALBERT ANDERSON, Wilson....1898-1902
[4]EDWARD C. REGISTER, Charlotte....1898-1902
[4]THOMAS S. McMULLAN, Hertford....1900-1902
[4]JOHN C. WALTON....1900-1902

EIGHTH BOARD

A. A. KENT, Lenoir....1902-1908
CHARLES O'H. LAUGHINGHOUSE, Greenville....1902-1908
M. H. FLETCHER, Asheville....1902-1908
JAMES M. PARROTT, Kinston....1902-1908
J. T. J. BATTLE, Greensboro....1902-1908
FRANK H. RUSSELL, Wilmington....1902-1908
[1]GEORGE W. PRESSLY, Secretary, Charlotte....1902-1906
[5]G. T. SIKES, Secretary, Grissom....1906-1908

NINTH BOARD

LEWIS B. McBRAYER, Asheville....1908-1914
JOHN C. RODMAN, Washington....1908-1914
WILLIAM W. McKENZIE, Salisbury....1908-1914
HENRY H. DODSON, Greensboro....1908-1914
JOHN BYNUM, Winston-Salem....1908-1914
J. L. NICHOLSON, Richlands....1908-1914
BENJ. K. HAYS, Secretary, Oxford....1908-1914

TENTH BOARD

ISAAC M. TAYLOR, Morganton....1914-1920
JOHN Q. MYERS, Charlotte....1914-1920
JACOB F. HIGHSMITH, Fayetteville....1914-1920
MARTIN L. STEVENS, Asheville....1914-1920
[6]CHARLES T. HARPER, Wilmington....1914-1915
[7]EDWIN G. MOORE, Elm City....1915-1920
[8]JOHN G. BLOUNT, Washington....1914-1920
HUBERT A. ROYSTER, Secretary, Raleigh....1914-1920

ELEVENTH BOARD

LESTER A. CROWELL, Lincolnton....1920-1926
WILLIAM P. HOLT, Duke....1920-1926
J. GERALD MURPHY, Wilmington....1920-1926
LUCIUS N. GLENN, Gastonia....1920-1926
CLARENCE A. SHORE, Raleigh....1920-1926
WILLIAM M. JONES, Greensboro....1920-1926
KEMP P. B. BONNER, Secretary, Morehead City....1920-1926

TWELFTH BOARD

PAUL H. RINGER, Asheville....1926-1932
W. HOUSTON MOORE, Wilmington....1926-1932
T. W. M. LONG, Roanoke Rapids....1926-1932
[6]W. W. DAWSON, Grifton....1926-1932
J. K. PEPPER, Winston-Salem....1926-1932
FOY ROBERSON, Durham....1926-1932
JOHN W. McCONNELL, Secretary, Davidson....1926-1932
[9]DAVID T. TAYLOE, JR., Washington....1930-1932

THIRTEENTH BOARD

BEN F. ROYAL, Morehead City....1932-1938
BENJ. J. LAWRENCE, Secretary, Raleigh....1932-1938
F. WEBB GRIFFITH, Asheville....1932-1938
HAMILTON W. McKAY, Charlotte....1932-1938
J. W. VERNON, Morganton....1932-1938
W. H. SMITH, Goldsboro....1932-1938
K. G. AVERITT, Cedar Creek....1932-1938

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[1]Resigned before the expiration of his term.
[2]Elected to serve the unexpired term of Dr. Burbank.
[3]Elected to serve the unexpired term of Dr. Whitehead.
[4]Elected for short term expiring in 1902.
[5]Elected to serve the unexpired term of Dr. Pressly.
[6]Died before the expiration of his term.
[7]Elected to serve the unexpired term of Dr. Harper.
[8]Died a few months before the expiration of his term; such a short time that the vacancy was not filled.
[9]Elected to serve unexpired term of Dr. W. W. Dawson.

NOTE: In 1890 the Medical Society of the State of North Carolina adopted the plan of electing members of the Board in such a manner that the terms would expire at different intervals of two years. This practice was followed for twelve years, or until 1902, when the plan was abandoned; an equivalent of two terms of six years each. It is evident that the Society arranged to abandon the policy as early as 1898, as two members were elected for short terms, and two years later two other members were elected for still shorter terms. It is therefore impossible to separate the sixth and seventh Boards, since the membership was overlapping.

ROSTER OF MEMBERS NORTH CAROLINA STATE BOARD OF HEALTH
FROM ORGANIZATION IN 1877 TO 1934

Name	Address	Appointed by	Term
S. S. Satchwell, M.D., President	Rocky Point	State Society	1877 to 1878
Thomas, F. Wood, M.D., Secretary	Wilmington	State Society	1877 to 1878
Joseph Graham, M.D.	Charlotte	State Society	1877 to 1878
Charles Duffy, Jr., M.D.	New Bern	State Society	1877 to 1878
Peter E. Hines, M.D.	Raleigh	State Society	1877 to 1878
George A. Foote, M.D.	Warrenton	State Society	1877 to 1878
S. S. Satchwell, M.D., President	Rocky Point	State Society	1878 to 1884
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1878 to 1884
Charles J. O'Hagan, M.D., President	Greenville	State Society	1878 to 1882
George A. Foote, M.D.	Warrenton	State Society	1878 to 1882
Marcellus Whitehead, M.D.	Salisbury	State Society	1878 to 1880
R. L. Payne, M.D.	Lexington	State Society	1878 to 1880
H. G. Woodfin, M.D.	Franklin	Gov. Z. B. Vance	1878 to 1880
A. R. Ledeux, Chemist	Chapel Hill	Gov. Z. B. Vance	1878 to 1880
William Cain, Civil Engineer	Charlotte	Gov. Z. B. Vance	1878 to 1880
R. L. Payne, M.D.	Lexington	State Society	1881 to 1887
M. Whitehead, M.D., President	Salisbury	State Society	1881 to 1884
S. H. Lyle, M.D.	Franklin	Gov. T. J. Jarvis	1881 to 1883
William Cain, Civil Engineer	Charlotte	Gov. T. J. Jarvis	1881 to 1883
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1881 to 1883
J. W. Jones, M.D., President	Wake Forest	State Society	1883 to 1889
John McDonald, M.D.	Washington	State Society	1883 to 1889
S. H. Lyle, M.D.	Franklin	Gov. T. J. Jarvis	1883 to 1885
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1883 to 1885
Arthur Winslow, Civil Engineer	Raleigh	Gov. T. J. Jarvis	1883 to 1886
R. H. Lewis, M.D.	Raleigh	State Board of Health	1884 to 1886
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1885 to 1887
William D. Hillard, M.D.	Asheville	State Society	1885 to 1891
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1885 to 1891
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1885 to 1887
J. H. Tucker, M.D.	Henderson	Gov. A. M. Scales	1885 to 1887
R. H. Lewis, M.D., Secretary	Raleigh	State Society	1887 to 1888
H. T. Bahnson, M.D., President	Winston	State Society	1887 to 1888
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1887 to 1889
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1887 to 1889
J. H. Tucker, M.D.	Henderson	Gov. A. M. Scales	1888 to 1891
J. L. Ludlow, Civil Engineer	Winston	Gov. A. M. Scales	1888 to 1891
J. H. Tucker, M.D.	Henderson	Gov. D. G. Fowle	1888 to 1891
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. D. G. Fowle	1889 to 1893
J. L. Ludlow, Civil Engineer	Winston	Gov. D. G. Fowle	1889 to 1892
J. A. Hodges, M.D.	Fayetteville	State Society	1889 to 1893
J. M. Baker, M.D.	Tarboro	State Society	1891 to 1893
J. H. Tucker, M.D.	Henderson	Gov. T. M. Holt	1891 to 1893
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. T. M. Holt	1891 to 1892
J. L. Ludlow, Civil Engineer	Winston	Gov. T. M. Holt	1891 to 1897
Thomas, F. Wood, M.D., Secretary*	Wilmington	State Society	1892 to 1897
George G. Thomas, M.D., President	Wilmington	State Board of Health	1891 to 1895
S. Westray Battle, M.D.	Asheville	State Society	1892 to 1895
W. H. Harrell, M.D.	Williamston	State Society	1893 to 1895
John Whitehead, M.D.	Salisbury	State Board of Health	1893 to 1895
W. H. G. Lucas	White Hall	Gov. Elias Carr	1893 to 1895
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1893 to 1895
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1893 to 1895
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1894 to 1897
W. P. Beall, M.D.	Greensboro	Gov. Elias Carr	1895 to 1897
W. J. Lumsden, M.D.	Elizabeth City	Gov. Elias Carr	1895 to 1897
John Whitehead, M.D.	Salisbury	State Society	1895 to 1897
W. H. Harrell, M.D.	Williamston	State Society	1895 to 1897
W. P. Beall, M.D.	Greensboro	Gov. Elias Carr	1895 to 1897
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1895 to 1897
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1897 to 1899
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1897 to 1899
Charles J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1897 to 1899
John D. Spicer, M.D.	Goldsboro	Gov. D. L. Russell	1897 to 1899
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1897 to 1899
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1899 to 1901
A. W. Shaffer, Civil Engineer	Raleigh	Gov. D. L. Russell	1899 to 1901
Charles J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1899 to 1901
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1899 to 1901
Albert Anderson, M.D.	Wilson	Gov. D. L. Russell	1899 to 1901
George G. Thomas, M.D., President	Wilmington	State Society	1899 to 1901
S. Westray Battle, M.D.	Asheville	State Society	1899 to 1901
H. W. Lewis, M.D.	Jackson	State Society	1899 to 1901
H. H. Dodson, M.D.	Milton	State Society	1899 to 1901
R. H. Lewis, M.D., Secretary	Raleigh	Gov. C. B. Aycock	1901 to 1907
W. P. Ivey, M.D.	Lenoir	Gov. C. B. Aycock	1901 to 1907
George G. Thomas, M.D., President	Wilmington	Gov. C. B. Aycock	1901 to 1905
Francis Duffy, M.D.	New Bern	Gov. C. B. Aycock	1901 to 1905

*Died in 1892, leaving a five-year unexpired term, which was filled by the Board.

MEMBERS STATE BOARD OF HEALTH—Continued

Name	Address	Appointed by	Term
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1901 to 1905
S. Westray Battle, M.D.	Asheville	State Society	1901 to 1907
H. W. Lewis, M.D.	Jackson	State Society	1901 to 1907
W. H. Whitehead, M.D.	Rocky Mount	State Society	1901 to 1905
J. L. Nicholson, M.D.	Richlands	State Society	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1903 to 1909
J. Howell Way, M.D.	Waynesville	Gov. R. B. Glenn	1905 to 1911
W. O. Spencer, M.D.	Winston	Gov. R. B. Glenn	1905 to 1911
George G. Thomas, M.D., President	Wilmington	State Society	1905 to 1911
Thomas E. Anderson, M.D.	Statesville	State Society	1905 to 1911
R. H. Lewis, M.D.	Raleigh	Gov. R. B. Glenn	1907 to 1913
E. C. Register, M. D.	Charlotte	Gov. R. B. Glenn	1907 to 1913
David T. Tayloe, M.D.	Washington	State Society	1907 to 1909
James A. Burroughs, M.D.[1]	Asheville	State Society	1907 to 1913
J. E. Ashcraft, M.D.	Monroe	State Board of Health	1909 to 1913
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. W. W. Kitchin	1909 to 1913
J. Howell Way, M.D., President	Waynesville	Gov. W. W. Kitchin	1911 to 1917
W. O. Spencer, M.D.	Winston-Salem	Gov. W. W. Kitchin	1911 to 1917
Thomas E. Anderson, M.D.	Statesville	State Society	1911 to 1917
Charles O'H. Laughinghouse, M.D.	Greenville	State Society	1911 to 1917
R. H. Lewis, M.D.	Raleigh	Gov. Locke Craig	1913 to 1919
Edw. J. Wood, M.D.	Wilmington	Gov. Locke Craig	1913 to 1919
A. A. Kent, M.D.[2]	Lenoir	State Society	1913 to 1915
Cyrus Thompson, M.D.	Jacksonville	State Society	1913 to 1919
Fletcher R. Harris, M.D.	Henderson	State Board of Health	1913 to 1919
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. Locke Craig	1915 to 1921
J. Howell Way, M.D., President	Waynesville	Gov. T. W. Bickett	1917 to 1923
E. C. Register, M.D.[1]	Charlotte	Gov. T. W. Bickett	1917 to 1923
Thomas E. Anderson, M.D.	Statesville	State Society	1917 to 1923
Charles O'H. Laughinghouse, M.D.	Greenville	State Society	1917 to 1923
Fletcher R. Harris, M.D.[3]	Henderson	State Society	1919 to 1923
A. J. Crowell, M.D.	Charlotte	Gov. T. W. Bickett	1919 to 1923
Chas. E. Waddell, C.E.[4]	Asheville	Gov. C. Morrison	1921 to 1923
Cyrus Thompson, M.D.	Jacksonville	State Society	1919 to 1925
R. H. Lewis, M.D.	Raleigh	Gov. T. W. Bickett	1919 to 1925
E. J. Tucker, D.D.S.	Roxboro	Gov. T. W. Bickett	1923 to 1925
J. Howell Way, M.D., President	Waynesville	Gov. C. Morrison	1923 to 1929
A. J. Crowell, M.D.	Charlotte	Gov. C. Morrison	1923 to 1929
James P. Stowe, Ph.G.	Charlotte	Gov. C. Morrison	1923 to 1927
D. A. Stanton, M.D.	High Point	State Board of Health	1923 to 1925
Thomas E. Anderson, M.D.	Statesville	State Society	1923 to 1929
Charles O'H. Laughinghouse, M.D.[5]	Greenville	State Society	1923 to 1926
Cyrus Thompson, M.D.[1]	Jacksonville	State Society	1925 to 1931
D. A. Stanton, M.D.	High Point	State Society	1925 to 1931
R. H. Lewis, M.D.[1]	Raleigh	Gov. A. W. McLean	1925 to 1931
Jno. B. Wright, M.D.[6]	Raleigh	Gov. A. W. McLean	1926 to 1931
E. J. Tucker, D.D.S.[6]	Roxboro	Gov. A. W. McLean	1925 to 1931
W. S. Rankin, M.D.[4]	Charlotte	State Board of Health	1926 to 1927
L. E. McDaniel, M.D.	Jackson	State Board of Health	1927 to 1929
Chas. C. Orr, M.D.	Asheville	Gov. A. W. McLean	1927 to 1929
Thomas E. Anderson, M.D.[6]	Statesville	State Society	1929 to 1935
L. E. McDaniel, M.D.[6]	Jackson	State Society	1929 to 1935
James P. Stowe, Ph.G.[6]	Charlotte	Gov. A. W. McLean	1927 to 1933
A. J. Crowell, M.D.[6]	Charlotte	Gov. O. Max Gardner	1929 to 1935
J. M. Parrott, M.D.[6]	Kinston	State Board of Health	1930 to 1931
Chas. C. Orr, M.D.[6]	Asheville	Gov. O. Max Gardner	1929 to 1935
J. M. Parrott, M.D.[6]	Kinston	State Society	1931 to 1935
C. V. Reynolds, M. D.	Asheville	State Society	1931 to 1935
L. B. Evans, M. D.	Windsor	State Society	1931 to 1933
S. D. Craig, M. D.	Winston-Salem	State Society	1931 to 1933
John T. Burrus, M. D.	High Point	Gov. O. Max Gardner	1931 to 1933
J. N. Johnson, D.D.S.	Goldsboro	Gov. O. Max Gardner	1931 to 1933
J. A. Goode, Ph.G.	Asheville	Gov. O. Max Gardner	1931 to 1933
H. L. Large, M.D.	Rocky Mount	Gov. O. Max Gardner	1931 to 1935
H. G. Baity, C.E.	Chapel Hill	Gov. O. Max Gardner	1931 to 1935
Grady G. Dixon, M.D.[7]	Ayden	Ex. Com. State Society	1931 to 1932
Grady G. Dixon, M.D.[7]	Ayden	State Society	1932 to 1935
S. D. Craig	Winston-Salem	State Society	1933 to 1937
W. T. Rainey, M.D.	Fayetteville	State Society	1933 to 1937
Grady G. Dixon, M.D.	Ayden	State Society	1935 to 1939
J. LaBruce Ward, M.D.	Asheville	State Society	1935 to 1939
H. Lee Large, M.D.	Rocky Mount	Gov. J. C. B. Ehrnighaus	1935 to 1939
H. G. Baity, C.E.	Chapel Hill	Gov. J. C. B. Ehrnighaus	1935 to 1939

[1]Died leaving unexpired term. [2]Resigned to become member of General Assembly.
[3]Resigned to become Health Officer Vance County. [4]Resigned.
[5]Resigned to become Secretary of State Board of Health.
[6]Term terminated account reorganization State Board of Health by General Assembly.
[7]To fill vacancy caused by resignation of Dr. J. M. Parrott.

STATUS OF SOCIETY MEMBERSHIP BY COUNTIES FOR YEARS 1921-1935

County	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Alamance-Caswell *a*	27	31	27	27	25	27	30	30	32	33	33	32	29	32	30
Alexander *b*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alleghany *n*	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anson	1	2	12	12	11	10	6	8	8	6	6	4	4	9	7
Ashe *p*	5	9	8	6	10	6	8	6	5	5	5	4	.....	.....	7
Avery *r*	5	4	5	5	5	5	6	6	6	5	5	5	.....	5	5
Beaufort	12	14	17	14	17	17	17	17	16	18	15	15	12	13	15
Bertie	9	12	10	9	9	8	8	8	6	7	9	7	8	9	11
Bladen	7	7	4	3	8	7	8	8	8	8	8	8	5	6	6
Brunswick	1	1	1	1	1	1	1	4	6	2	2	2	2	2	3
Buncombe	92	96	99	105	97	102	118	120	118	113	112	105	83	107	115
Burke	12	11	15	13	14	11	11	12	12	17	17	17	17	12	10
Cabarrus	19	21	23	19	21	21	22	27	27	23	20	20	10	14	21
Caldwell	10	12	12	10	11	14	15	15	13	15	14	12	9	12	12
Camden *c*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Carteret	9	8	12	10	10	12	12	11	11	12	12	12	12	12	11
Caswell *d*	2	1	1	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
Catawba	16	22	20	19	16	16	21	16	17	13	13	16	8	16	16
Chatham	11	6	7	9	9	7	9	8	9	9	4	3	2	3	2
Cherokee	10	10	10	9	10	9	8	10	10	10	9	8	5	8	8
Chowan-Perquimans	7	6	7	8	5	9	10	9	7	8	6	7	6	7	5
Clay *e*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	16	19	18	18	17	19	20	20	22	23	19	22	21	20	21
Columbus	8	9	14	11	12	14	15	14	14	15	10	8	8	10	11
Craven	6	8	10	12	14	16	17	15	14	13	13	14	9	5	10
Cumberland	24	23	22	32	31	28	29	28	22	26	23	21	27	27	27
Currituck *s*	5	5	4	4	4	4	3	2	1	1	1	1	.....	.....	.....
Dare *f*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davidson	16	18	18	22	20	19	19	18	17	16	17	17	17	20	23
Davie	4	4	6	4	5	4	5	5	5	5	5	6	4	2	1
Duplin	12	11	12	12	13	13	13	9	11	9	11	7	2	2	9
Durham-Orange	40	43	43	47	53	60	64	63	65	67	76	77	76	76	85
Edgecombe-Nash	15	15	12	10	11	12	12	12	7	10	43	39	25	46	49
Forsyth	62	60	59	62	63	64	66	74	59	70	66	69	70	73	77
Franklin	10	12	12	12	12	12	10	12	11	10	9	7	7	9	8
Gaston	38	39	40	40	39	40	38	39	39	36	33	37	12	28	30
Gates	.....	.....	1	1	1	.....	.....	1	2	2	2	2	2	2	2
Graham	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Granville	14	14	12	13	13	12	12	14	13	13	13	12	10	10	11
Greene	7	7	5	6	5	5	5	5	5	5	5	5	5	6	5
Guilford	78	80	87	93	107	112	119	123	130	124	124	118	91	102	99
Halifax	24	24	18	21	20	16	14	17	17	16	15	14	13	15	18
Harnett	15	16	15	15	13	12	16	16	15	14	13	15	16	14	15
Haywood	10	12	13	13	14	14	13	8	14	14	12	13	15	20	19
Henderson *j*	.....	.....	.....	.....	.....	17	19	16	16	19	14	12	9	17	17
Henderson-Polk *g*	13	13	13	13	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hertford	10	10	10	10	8	8	7	7	6	5	5	5	6	7	7
Hoke	8	6	8	9	11	10	11	12	14	14	14	12	11	13	14
Hyde	1	2	1	2	1	1	1	1	1	1	1	1	.....	1	1
Iredell-Alexander	18	20	19	20	26	29	34	37	39	38	38	39	29	38	38
Jackson	6	6	6	8	7	7	6	5	6	6	3	7	2	4	7
Johnston	23	26	25	25	24	28	24	23	18	23	25	20	19	19	21
Jones	.....	1	2	1	4	4	3	3	3	3	3	3	3	3	3
Lee	8	10	10	11	13	13	13	14	16	13	11	13	10	10	10
Lenoir	19	20	17	20	18	20	22	23	20	22	17	19	20	22	20
Lincoln	14	13	14	16	11	11	12	13	14	13	10	12	12	13	11
Macon-Clay	7	7	7	7	6	8	8	9	6	8	4	3	2	5	3
Madison	12	8	11	11	11	11	5	12	7	5	3	4	5	4	4
Martin *t*	14	12	13	10	10	10	10	10	10	8	7	4	.....	.....	.....
Martin-Washington-Tyrrell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	10	12
McDowell	5	5	6	7	8	7	8	7	9	12	10	10	11	10	13
Mecklenburg	104	110	115	109	121	117	104	119	125	128	124	117	104	108	116
Mitchell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2
Mitchell-Avery	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....	.....
Mitchell-Watauga	8	10	10	7	7	8	7	9	8	6	5	5	.....	.....	.....
Montgomery	11	10	9	9	8	9	9	10	11	9	10	9	7	9	9
Moore	17	21	20	20	19	21	17	20	22	17	21	21	18	22	21
Nash *m*	26	30	30	33	34	32	31	30	30	33	.....	.....	.....	.....	.....
New Hanover	46	51	46	44	42	40	41	38	32	38	37	35	25	35	39
Northampton	11	11	10	10	10	11	9	9	6	3	4	5	4	8	4
Onslow	7	7	5	6	6	5	5	6	5	5	5	6	6	6	5
Orange *h*	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pamlico	6	5	5	4	5	5	5	5	5	4	4	4	4	4	4
Pasquotank-Camden-Currituck-Dare	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	14	12

STATUS OF MEMBERSHIP BY COUNTIES—Continued

County	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Pasquotank-Camden-Dare	11	19	18	17	18	19	18	16	14	17	14	11	.....	.....	.....
Pender	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1
Perquimans *i*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Person	11	10	10	10	8	7	7	7	6	6	6	6	7	7	8
Pitt	19	24	23	24	26	24	26	31	24	27	27	20	14	22	26
Polk *j*	.....	.....	.....	.....	.....	5	6	6	6	6	5	7	7	6	6
Randolph	15	14	14	13	14	12	10	11	10	8	7	14	10	11	13
Richmond	14	13	14	16	19	18	18	18	14	17	17	15	16	15	16
Robeson	34	33	27	29	30	31	28	28	21	24	21	22	23	25	27
Rockingham	23	25	21	23	26	23	24	21	20	24	24	21	22	23	21
Rowan	31	32	32	36	40	40	40	42	35	35	39	33	24	34	30
Rutherford	12	18	22	21	21	22	24	22	22	22	21	21	19	20	21
Sampson	14	12	13	17	15	14	13	13	10	13	13	14	14	14	14
Scotland	12	12	12	12	12	12	12	12	12	10	11	11	11	11	11
Stanly	12	11	12	15	14	13	15	14	14	16	15	13	12	16	17
Stokes	6	12	9	10	10	5	7	8	6	2	6	6	1	1	1
Surry	25	25	24	26	22	17	20	22	20	20	13	17	12	.....	.....
Surry-Yadkin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	22
Swain	1	4	3	1	1	1	.....	.....	.....	.....	.....	.....	.....	3	0
Transylvania	1	5	6	4	8	4	5	7	4	2	2	1	3	2	2
Tyrrell *k*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union	17	17	18	18	19	19	16	16	14	13	10	9	10	10	11
Vance	11	10	10	12	11	12	11	11	11	12	8	7	8	9	9
Wake	73	76	85	73	78	79	78	80	84	94	87	86	87	89	88
Warren	8	7	7	6	6	6	6	6	6	6	6	6	5	5	6
Washington-Tyrrell *u*	10	9	9	9	8	8	6	6	5	3	3	3	.....	.....	.....
Watauga *l q*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Watauga-Ashe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	5	6
Wayne	24	33	32	29	32	34	32	38	38	38	30	32	22	27	29
Wilkes *o*	11	10	10	10	10	9	14	11	10	10	11	10	.....	.....	.....
Wilkes-Alleghany	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	13	10
Wilson	31	28	31	31	32	34	34	35	31	28	28	22	21	25	29
Yadkin *v*	5	4	3	2	3	2	2	3	5	10	.....	4	1	.....	.....
Yancey	1	1	1	1	1	2	7	5	3	4	1	1	.....	5	4
Totals	1491	1571	1592	1606	1657	1666	1691	1738	1669	1694	1600	1559	1363	1563	1619

a The figures for 1926 are for Alamance-Caswell; for the other years, for Alamance only; *b* See Iredell-Alexander; *c* See Pasquotank-Camden-Dare; *d* For 1926, see Alamance-Caswell; *e* See Macon-Clay; *f* See Pasquotank-Camden Dare; *g* See Henderson or Polk for years after 1925; *h* See Durham-Orange; *i* See Chowan-Perquimans; *j* See Henderson-Polk for 1912-1925; *k* See Washington-Tyrrell; *l* See Mitchell-Watauga; *m* See Edgecombe-Nash for 1931; for the other years Edgecombe only; *n* See Wilkes-Alleghany; *o* See Wilkes-Alleghany; *p* See Watauga-Ashe; *q* See Watauga-Ashe; *r* See Mitchell-Avery; *s* See Pasquotank-Camden-Currituck-Dare; *t* See Martin-Washington-Tyrrell; *u* See Martin-Washington-Tyrrell; *v* See Surry-Yadkin.

HONORARY FELLOWS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Abel, J. F. ..... Waynesville
Abernathy, H. N. ..... Charlotte
*Achorn, John W. ..... Pinebluff
*Adams, C. A. ..... Durham
*Adams, Charles E. ..... Gastonia
*Adams, M. R. ..... Statesville
*Alexander, Annie L. ..... Charlotte
Alexander, Jas. R. ..... Charlotte
Allen, Jos. A. ..... New London
*Allen, Rufus L. ..... Waynesville
*Alston, B. P. ..... Epsom
*Ambler, C. P. ..... Asheville
Anders, McT. G. ..... Gastonia
*Anderson, Albert ..... Raleigh
Anderson, Chas. A. ..... Burlington
Anderson, Thos. Eli ..... Statesville
Anderson, Wade H. ..... Wilson
*Archery, L. M. ..... Concord
*Asbury, F. E. ..... Asheboro
Ashecraft, J. E. ..... Fayetteville
Ashworth, Benj. L. ..... Marion
Ashworth, W. C. ..... Greensboro
*Attmore, Geo. S. ..... Stonewall
Averitt, K. G. ..... Cedar Creek
Aydette, Jos. P. ..... Earl
*Bahnson, H. T. ..... Winston-Salem
Baker, J. M. ..... Tarboro
Banner, Chas. W. ..... Greensboro
*Barrier, P. A. ..... Mt. Pleasant
Bass, H. H. ..... Henderson
Battle, J. T. J. ..... Greensboro
*Battle, Kemp P. ..... Raleigh
*Battle, S. W. ..... Asheville
*Beall, Wm. P. ..... Greensboro
Bell, A. E. ..... Mooresville
Bellamy, Robert H. ..... Wilmington
*Bellamy, W. J. H. ..... Wilmington
*Boddie, N. P. ..... Durham
*Bolton, Mahlon ..... Rich Square
Bonner, K. P. B. ..... Morehead City
Boone, W. H. ..... Durham
*Booth, Samuel D. ..... Oxford
Bowman, H. P. ..... Greensboro
Brown, G. A. ..... Mt. Ulla
Brown, J. S., Sr. ..... Hendersonville
*Brownson, W. C. ..... Asheville
Buffaloe, J. S. ..... Garner
*Bullock, D. W. ..... Wilmington
Bullock, Thomas C. ..... Autryville
Burrus, John T. ..... High Point
Burt, B. W. ..... Holly Springs
Burt, S. P. ..... Louisburg
Byerly, Andrew B. ..... Cooleemee
*Bynum, John ..... Winston-Salem
*Caldwell, D. G. ..... Concord
*Carroll, E. D. Dixon ..... Raleigh
Caviness, Zebulon M. ..... Raleigh
*Cheatham, Archibald ..... Durham
Cheesborough, Thos. P. ..... Asheville
*Clark, G. L. ..... Clarkton
Cobb, Wm. H., Jr. ..... Goldsboro
Cotton, Clyde E. ..... Asheville
*Council, J. B. ..... Salisbury
*Covington, J. M. ..... Wadesboro
Cox, E. L. ..... Jacksonville
*Croom, J. D. ..... Maxton
Crowell, A. J. ..... Charlotte
Crowell, L. A. ..... Lincolnton
Daligny, Charles ..... Troy
*Dalton, David N. ..... Winston-Salem
Dalton, Wm. N. ..... Winston-Salem
Davis, Thomas W. ..... Winston-Salem
Davidson, John E. S. ..... Charlotte
DeArmon, J. McC. ..... Charlotte
*Denny, Wm. W. ..... Pink Hill
Dickinson, E. T. ..... Wilson
*Dillard, Richard, Jr. ..... Edenton
Dixon, Guy E. ..... Hendersonville
Dixon, Wm. H. ..... Ayden
*Dodson, H. H. ..... Greensboro
*Duffy, Charles ..... New Bern
*Duffy, Francis ..... New Bern
Eddleman, H. M. ..... Gastonia
*Edgerton, Jas. L. ..... Hendersonville
*Edwards, G. C. ..... Hookerton
Edwards, J. D. ..... Siler City
Ellis, R. C. ..... Shelby
*Faison, I. W. ..... Charlotte
*Faison, Wm. W. ..... Goldsboro
Fearing, Isaiah ..... Elizabeth City
*Fletcher, M. H. ..... Asheville
Flippin, J. M. ..... Pilot Mountain

*Deceased.

Flippin, Samuel T.....Siloam
Fortune, Alex. F.....Greensboro
*Fox, M. F.....Guilford College
*Freeman, Richard A.....Burlington
Galloway, W. C.....Wilmington
Garrison, David A.....Gastonia
Gibbon, Robert L.....Charlotte
*Gilmer, Chas. S.....Greensboro, R. 6
Gilreath, Frank H.....N. Wilkesboro
Glascock, Joy H.....Greensboro
Glenn, Lucius N.....Gastonia
*Goley, Wm. R.....Graham
Goodman, A. B.....Lenoir
*Goodman, E. G.....Lanvale
*Goodwin, A. W.....Raleigh
Gouger, Geo. J.....Concord
Gove, Anna M.....Greensboro
Grady, James C.....Kenly
Grady, Wm. Earle.....Tryon
*Graham, Joseph .....Charlotte
*Graham, Wm. A.....Charlotte
*Griffin, J. A.....Clayton
Griggs, W. T.....Poplar Branch
Halford, J. W.....Lillington
*Hall, Wright .....Wilmington
*Halsey, B. F.....Roper
Hardy, Ira M.....Kinston
*Hargrove, R. H.....Robersonville
Harrill, L. B.....Caroleen
*Harris, F. R.....Henderson
*Harriss, I. A.....Weaverville
Harrison, Edmund .....Greensboro
Harris, A. H.....Wilmington
Hathcock, Thos. A.....Norwood
Hays, Benj. K.....Oxford
*Haywood, F. J.....Raleigh
*Haywood, Hubert, Sr.....Raleigh
*Herring, B. S.....Wilson
Hicks, Calvin S.....Durham
Hicks, I. F.....Dunn
*Hicks, Romeo.....Henrietta
*Hicks, Wm. N.....Durham
Highsmith, Chas. .....Dunn
Highsmith, J. F.....Fayetteville
Highsmith, Seavy .....Fayetteville
*Hill, L. H.....Germantown
Hill, Wm. I.....Albemarle
Holloway, Robt. L.....West Durham
Holt, Wm. P., Sr.....Erwin
*Holt, Wm. T.....Greensboro
*Hooks, Thel.....Smithfield
Hoover, C. H.....Crouse
Horton, W. C.....Raleigh
Houck, Albert F.....Lenoir
Houser, E. A.....Shelby
Hubbard, C. C.....Farmer
*Hudson, Wm. L.....Dunn
*Hughes, Francis W.....New Bern
Hunter, L. W.....Charlotte
Ingram, Chas. B.....Mt. Gilead
*Irwin, J. R.....Charlotte
*Jenkins, Chas. L.....Raleigh
Jewett, Robert D.....Wilmington
John, Peter .....Laurinburg
Johnson, N. M.....Durham
Johnson, Thos. C.....Lumberton
Jonas, John F.....Marion
*Jones, Clara E.....Goldsboro
*Jones, A. G.....Walnut Cove
Jones, W. M.....Greensboro
*Jordan, Chas. S.....Asheville
*Jordan, T. M.....Raleigh
Judd, J. M.....Varina
*Julian, Charles A.....Greensboro
*Kapp, Henry H.....Winston-Salem
Kent, Alfred A.....Winter Park, Fla.
Kerr, J. Edwin.....Winston-Salem
King, Parks M.....Charlotte
Kirby, Guy S.....Marion
Kirk, W. R.....Hendersonville
*Knight, J. B. H.....Williamston
Knight, Wm. P.....Greensboro
Kornegay, Lemuel W.....Rocky Mount
Knox, A. W.....Raleigh
Koonce, S. E.....Wilmington
Lamm, Isaac W.....Raleigh
Lattimore, E. B.....Shelby
*Laughinghouse, Chas. O'H.....Raleigh
Lee, Lawrence V.....Lattimore
*Leggett, Kenelm.....Hobgood
*Lewis, Geo. W.....Wilson
Lewis, H. W.....Jackson
*Lewis, R. H.....Raleigh
Lilly, Jas. M.....Fayetteville
Linville, A. Y.....Winston-Salem
*Lockett, Everett A.....Winston-Salem

*Deceased.

*Long, Benj. L.....Hamilton
*Long, Geo. W.....Graham
Long, H. F.....Statesville
*Long, J. W.....Greensboro
*Love, W. J.....Wilmington
*Lyle, S. H.....Franklin
McAnally, W. J.....High Point
McBrayer, L. B.....Southern Pines
McCain, Wm. R..... High Point
McCampbell, John.....Morganton
McCracken, C. M.....Fairview
McCracken, J. R.....Waynesville
*McDonald, A. D..... ....Wilmington
McGeachy, R. S.....Weldon
McGee, J. W..... .. ..Raleigh
McIver, Lynn .....Sanford
*McKay, A. M.....Summerville
*McKay, John A..... .....Buies Creek
McKay, Joseph F..... .Buies Creek
*McKee, James ....Raleigh
*McKenzie, W. W.....Salisbury
McLaughlin, C. S..... .....Charlotte
McLaughlin, J. E.....Statesville
McLeod, A. H.....Aberdeen
*McMillan, Benj. F.....Red Springs
*McMillan, J. D.....Lumberton
*McMillan, J. L.....Red Springs
McMillan, W. D.....Wilmington
*McNeill, J. W.....Fayetteville
*McNeill, Wm. M.....Buies Creek
McPherson, S. D.....Durham
Malloy, S. A.....Yanceyville
Manning, I. H.....Chapel Hill
*Manning, J. M.....Chapel Hill
Matthews, Jas. O.....Clinton
Matthews, M. L.....Sanford
Meadows, W. J.....Greensboro
Menzies, H. C.....Hickory
*Michaux, E. R..... .Greensboro
*Miller, J. F..... Goldsboro
Miller, Robert B.....Goldsboro
*Minor, Chas. L.....Asheville
*Misenheimer, C. A.....Charlotte
*Misenheimer, Theo. F.....Morven
Monk, Henry L.....Salisbury
*Monroe, W. A.....Sanford
*Montgomery, John C.....Charlotte
Moore, C. E.....Wilson
*Moore, Edwin G.....Elm City
Morris, J. A.....Oxford
Moseley, Chas. W.....Greensboro
Munroe, J. P.....Charlotte
*Murphy, John G.....Wilmington
Myers, John Q.....Charlotte
Nalle, B. C.....Charlotte
Nelson, R. J.....Robersonville
Nichols, Rhodes E.....Durham
*Nicholson, J. L.....Richland
Nicholson, P. A.....Washington
*Nicholson, Sam T.....Washington
Nisbet, W. O.....Charlotte
*Noble, R. J.....Selma
Nobles, Jos. E.....Greenville
Orr, Charles C.....Asheville
Orr, Porter B. .....Asheville
Paddison, John R.....Kernersville
Parker, G. E.....Benson
*Parrott, J. M.....Kinston
Parrott, Wm. Thomas.....Kinston
*Pate, Wm. T.....Gibson
Peeler, John H.....Salisbury
*Pemberton, Wm. D.....Concord
Person, James B., Jr.....Selma
*Perry, M. P.....Macon
Petrie, Robt. Wm.....Lenoir
Pfohl, Samuel F.....Winston-Salem
*Pharr, T. F.....Concord
*Pharr, Wm. W.....Charlotte
*Phillips, Matthew D.....Dalton
Pickett, John A.....Burlington
*Picot, L. J.....Littleton
Pope, Henry T.....Lumberton
Pressly, G. W.....Charlotte
*Prince, D. M.....Laurinburg
Quickel, Thos. C.....Gastonia
Rankin, W. S.....Charlotte
Ray, O. L.....Raleigh, Rt. 1
Redding, Alex H.....Asheboro
*Register, Edw. C.....Charlotte
Register, F. M.....Kinston
Reid, Geo. P.....Forest City
Reitzel, Claude E.....High Point
Reynolds, C. V.....Asheville
Ricks, Leonard E.....Fairmont
*Ritter, F. W.....Moyock
*Roberson, Chas. .....Greensboro

*Deceased.

Rodman, J. C. ..... Washington
*Rodwell, J. W. ..... Mocksville
Rogers, Jas. Rufus ..... Raleigh
Rogers, Wiley A. ..... Franklin
Ross, Geo. H. ..... East Durham
Royall, M. A. ..... Elkin
Royster, H. A. ..... Raleigh
Royster, S. S. ..... Shelby
*Royster, W. I. ..... Raleigh
Sawyer, C. J. ..... Windsor
Sawyer, W. W. ..... Elizabeth City
*Schaub, O. P. ..... Winston-Salem
*Schonwald, J. T. ..... Wilmington
*Sevier, D. E. ..... Asheville
Sevier, J. T. ..... Asheville
*Schaffner, J. F., Sr. ..... Winston-Salem
*Shamburger, J. B. ..... Star
Sharpe, Frank L. ..... Statesville
*Shaw, W. G. ..... Wagram
Shields, H. B. ..... Carthage
Sikes, G. L. ..... Salemburg
*Sikes, G. T. ..... Creedmoor
Skinner, Louis C. ..... Greenville
Slate, John S. ..... Winston-Salem
*Smith, J. B. ..... Pilot Mountain
*Smith, R. A. ..... Goldsboro
Smithwick, Jas. E. ..... Jamesville
Smoot, J. E. ..... Concord
*Snipes, E. P. ..... Jonesboro
Spainhour, Ellis H. ..... Winston-Salem
*Speight, R. H., Sr. ..... Whitakers
Spencer, W. O. ..... Winston-Salem
*Stamps, Thos. ..... Lumber Bridge
Stanton, D. A. ..... High Point
*Stevens, J. A. ..... Clinton
Stevens, M. L. ..... Asheville
*Stewart, H. D. ..... Monroe
Stokes, Jas. Ernest ..... Salisbury
Street, M. E. ..... Glendon
Strickland, Edw. F. ..... Winston-Salem
Stringfield, Thos. ..... Waynesville
Strong, Chas. Moore ..... Charlotte
*Summerell, E. M. ..... China Grove
*Summers, Chas. L. ..... Baltimore, Md. (Forsyth Co.)
Swann, Jos. F. ..... Gastonia
*Tayloe, D. T., Sr. ..... Washington
*Taylor, I. M. ..... Morganton
Taylor, Wm. L. ..... Oxford
Tennent, G. S. ..... Asheville
*Thomas, G. G. ..... Wilmington
Thompson, Alex. Frank ..... Troy
Thompson, C. D. ..... High Point
*Trantham, H. T. ..... Salisbury
*Tull, Henry ..... Kinston
Turner, J. P. ..... Greensboro
*Van Poole, C. M. ..... Salisbury
Vestal, W. J. ..... Lexington
*Von Ruck, Karl ..... Asheville
Walker, H. D. ..... Elizabeth City
*Ward, W. H. ..... Plymouth
*Way, J. Howell ..... Waynesville
Weaver, H. B. ..... Asheville
Weaver, W. J. ..... Asheville
Webb, B. G. ..... Andrews
Wessell, Jno. C. ..... Wilmington
West, Robt. M. ..... Salisbury
*Wharton, L. D. ..... Smithfield
Whisnant, A. M. ..... Charlotte
*Whitaker, R. A. ..... Kinston
*White, J. W. ..... Wilkesboro
*Whitehead, John ..... Salisbury
*Whitehead, W. H. ..... Rocky Mount
Whitfield, Wm. Cobb ..... Salisbury
*Whittington, W. P. ..... Asheville
Whittington, Wm. W. ..... Snow Hill
Wilkins, S. A. ..... Dallas
Williams, Albert F. ..... Wilson
Williams, John D. ..... Guilford Station
*Williams, J. H. ..... Asheville
Wilson, A. R. ..... Greensboro
Wilson, Robt. B. ..... Newton Grove
Wood, J. W. ..... Boiling Springs
Wright, Jno. B. ..... Raleigh
Yarborough, Richard F. ..... Louisburg
*Young, R. S. ..... Concord

*Deceased.

HONORARY MEMBERS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

*L. McL. Tiffany.....Baltimore, Md.
*W. W. Keen.....Philadelphia, Pa.
J. Allison Hodges.....Richmond, Va.
*R. L. Payne.....Norfolk, Va.
*J. N. McCormack.....Bowling Green, Ky.
R. L. Payne, Jr.....Norfolk, Va.
*J. L. Ludlow, C.E.....Winston-Salem
Paul V. Anderson.....Richmond, Va.
Stuart McGuire.....Richmond, Va.
William J. Mayo.....Rochester, Minn.
William Seaman Bainbridge.....New York, N. Y.
William Sharpe.....New York, N. Y.
William McKim Marriott.....St. Louis, Mo.
James K. Hall.....Richmond, Va.

*Deceased.

OFFICERS, 1934-1936

OFFICERS, 1934-35

President—Dr. P. P. McCain.....Sanatorium
President-elect—Dr. Paul H. Ringer.....Asheville
First Vice-President—Dr. J. F. McKay.....Buies Creek
Second Vice-President—Dr. William Allen.....Charlotte
Secretary-Treasurer—Dr. L. B. McBrayer, 1934-1937.....Southern Pines

OFFICERS, 1935-36

President—Dr. Paul H. Ringer.....Asheville
President-elect—Dr. C. F. Strosnider.....Goldsboro
First Vice-President—Dr. J. K. Pepper.....Winston-Salem
Second Vice-President—Dr. E. S. Bulluck.....Wilmington
Secretary-Treasurer—Dr. L. B. McBrayer, 1935-1937.....Southern Pines

COUNCILLORS, 1934-1937

First District—Dr. C. B. Williams.....Elizabeth City
Second District—Dr. K. B. Pace.....Greenville
Third District—Dr. J. F. Robertson.....Wilmington
Fourth District—Dr. E. S. Boice.....Rocky Mount
Fifth District—Dr. Roscoe D. McMillan.....Red Springs
Sixth District—Dr. W. M. Coppridge.....Durham
Seventh District—Dr. Forest M. Houser.....Cherryville
Eighth District—Dr. R. C. Mitchell.....Mount Airy
Ninth District—Dr. J. R. Terry.....Lexington
Tenth District—Dr. G. W. Murphy.....Asheville

CHAIRMEN OF SECTIONS, 1935-1936

Public Health and Education—Dr. N. Thomas Ennett.....Greenville
Surgery—Dr. Hunter B. Sweaney.....Durham
Opthalmology and OtoLaryngology—Dr. D. R. Wolff.....Greensboro
Gynecology and Obstetrics—Dr. Thomas Leslie Lee.....Kinston
Pediatrics—Dr. J. A. Shaw.....Fayetteville
Practice of Medicine—Dr. A. B. Holmes.....Fairmont

DELEGATES TO AMERICAN MEDICAL ASSOCIATION

Dr. M. L. Stevens, 1935-1936 inclusive.....Asheville
Dr. H. A. Royster, Alternate.....Raleigh
Dr. Geo. L. Carrington, 1935.....Burlington
Dr. Wingate M. Johnson, 1936-1937 inclusive.....Winston-Salem
Dr. W. T. Rainey, Alternate.....Fayetteville

DELEGATES TO MEDICAL SOCIETY OF VIRGINIA

Dr. C. B. Williams.....Elizabeth City
Dr. T. W. M. Long.....Roanoke Rapids
Dr. J. G. Raby.....Tarboro
Dr. R. S. McGeachy.....Weldon

DELEGATES TO SOUTH CAROLINA MEDICAL ASSOCIATION

Dr. J. B. Sidbury.....Wilmington
Dr. Addison G. Brenizer.....Charlotte
Dr. I. Thurman Mann.....High Point

DELEGATES TO NORTH CAROLINA DENTAL SOCIETY

Dr. H. B. Hiatt.....High Point
Dr. H. B. Ivey.....Goldsboro
Dr. R. M. Beam.....Lumberton
Dr. W. B. Dewar.....Raleigh

COMMITTEES

Medical Society Foundation

Dr. M. L. Stevens, 2 years.....Asheville
Dr. L. B. McBrayer, 1 year.....Southern Pines
Dr. W. S. Rankin, 5 years.....Charlotte
Dr. Reid Patterson, 4 years.....Charlotte
Dr. J. B. Sidbury, 3 years.....Wilmington

Obituaries

Dr. C. A. Woodard.....Wilson
Dr. J. F. Abel.....Waynesville

Legislation

Dr. Benj. J. Lawrence.....Raleigh
Dr. P. P. McCain.....Sanatorium
Dr. J. F. Highsmith, Sr.....Fayetteville

Moore County Medical Society Medal

Dr. W. C. Mudgett.....Southern Pines
Dr. Deryl Hart.....Durham
Dr. Wm. deB. MacNider.....Chapel Hill

Hospitals

Dr. J. F. Highsmith, Sr.....Fayetteville
Dr. I. M. Procter.....Raleigh
Dr. James W. Davis.....Statesville

Cancer

Dr. C. C. Carpenter.....Wake Forest
Dr. W. D. James.....Hamlet
Dr. H. B. Ivey.....Goldsboro

Advisory to Woman's Auxiliary

Dr. Verne S. Caviness.....Raleigh
Dr. W. T. Rainey.....Fayetteville
Dr. I. Thurman Mann.....High Point

State Advisory Committee to State Director FERA

Dr. P. P. McCain.....Sanatorium
Dr. Paul H. Ringer.....Asheville
Dr. C. F. Strosnider.....Goldsboro
Dr. Hubert B. Haywood.....Raleigh
Dr. L. B. McBrayer.....Southern Pines
Dr. John B. Wright.....Raleigh

Public Relations

Dr. Wingate M. Johnson.....Winston-Salem
Dr. D. W. Holt.....Greensboro
Dr. L. B. McBrayer.....Southern Pines

Maternity and Infancy

Dr. J. B. Sidbury.....Wilmington
Dr. Frank A. Sharpe.....Greensboro
Dr. W. Z. Bradford.....Charlotte

Advisory Committee to Industrial Commission

Dr. Donnell B. Cobb.....Goldsboro
Dr. Battle A. Hocutt.....Clayton
Dr. F. C. Smith.....Charlotte

Finance

Dr. Julian A. Moore, *Chairman*.....Asheville
Dr. W. M. Coppridge.....Durham
Dr. Vance P. Peery.....Kinston

Immunization against Diphtheria

Dr. J. B. Sidbury.....Wilmington
Dr. Frank A. Sharpe.....Greensboro
Dr. W. Z. Bradford.....Charlotte

To Confer with Industrial Commission in Regard to Minimum Fee Schedule

Dr. Donnell B. Cobb.....Goldsboro
Dr. J. B. Greene.....Asheville
Dr. John Stuart Gaul.....Charlotte
Dr. Hubert B. Haywood, Jr.....Raleigh
Dr. Charles I. Allen.....Wadesboro
Dr. Benj. J. Lawrence.....Raleigh
Dr. F. C. Smith.....Charlotte
Dr. Battle A. Hocutt.....Clayton

Medical Economics

Dr. Wingate M. Johnson.....Winston-Salem
Dr. R. F. Leinbach.....Charlotte
Dr. C. R. Sharpe.....Lexington

Printing

Dr. L. B. McBrayer, *ex-officio Chairman*.....Southern Pines
Dr. J. W. Dickie.....Southern Pines
Dr. E. C. Judd.....Raleigh

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA

1932-1938

Dr. Ben. F. Royal, *President*.....Morehead City
Dr. Benj. J. Lawrence, *Secretary*.....Raleigh
Dr. Wm. H. Smith.....Goldsboro
Dr. F. Webb Griffith.....Asheville
Dr. Hamilton W. McKay.....Charlotte
Dr. J. W. Vernon.....Morganton
Dr. K. G. Averitt.....Cedar Creek

STATE BOARD OF EXAMINERS FOR NURSES

Miss Bessie M. Chapman, R.N., *President*.....Greensboro
Miss Lula West, R.N., *Secretary-Treasurer and Educational Director*.....Mount Airy
Dr. D. A. Garrison, (From Hospital Association, 1931-1934).....Gastonia
Dr. C. H. Peete, (From Medical Society, 1934-1936).....Warrenton

ARRANGEMENTS

Dr. L. B. McBrayer, *Chairman*.....Southern Pines
Place of Meeting.....Pinehurst
Date.....May 4, 5, 6, 1935
Headquarters.....The Carolina

PROGRAM OF GENERAL SESSIONS

FIRST GENERAL SESSION

TUESDAY, MAY 7, 9:30 A. M.

(Ball Room)

1. Call to Order, Dr. Jno. Symington, Chairman, Committee on Arrangements, Carthage.
2. Invocation, Rev. A. J. McKelvay, Pastor Presbyterian Church, Pinehurst.
3. Presentation of the President, Dr. P. P. McCain, Sanatorium.
4. President's Address, Dr. P. P. McCain, Sanatorium.
5. Presentation President's Jewel to Dr. P. P. McCain by President-elect, Dr. Paul H. Ringer, Asheville.
6. Report of Committee on Award of Moore County Medical Society Medal for Best Paper read at 1934 Session and Presentation of Medal—
   Dr. A. H. McLeod, Chairman, Aberdeen
   Dr. Wm. deB. MacNider, Chapel Hill
   Dr. Deryl Hart, Durham
7. Report Obituary Committee
   Dr. J. B. Cranmer, Wilmington
   Dr. J. F. Abel, Waynesville
8. Address (Guest speaker) Dr. J. R. Young, Past President Medical Society of South Carolina, Anderson, S. C. "My Experience in 2200 Cases of Appendicitis."
9. Report Chairman Committee on Legislation 1935. (Special request of Executive Committee.)
10. "Pneumothorax Treatment of Lobar Pneumonia." Dr. L. A. Crowell, Jr., Lincolnton, N. C. From Section on Practice of Medicine.
11. "The Prevention, Formation, and Disintegration of Urinary Calculi"—Case report of rapid bilateral stone formation following injury. Drs. A. J. Crowell, Raymond Thompson, and Claude Squires.

DINNER MEETING—MAIN DINING ROOM

SECOND GENERAL SESSION

TUESDAY, MAY 7, 6:30 P. M.

Toastmaster—Dr. Oren Moore, Charlotte

Music

Greetings from Woman's Auxiliary, Mrs. J. Buren Sidbury, President

Music

Address—Hon. Julian Miller, Charlotte, Editor Charlotte Observer

THIRD GENERAL SESSION

WEDNESDAY, MAY 8, 9:00 A. M.

(Ball Room)

1. "Surgical Treatment in Non-collapsible Cavities." Dr. R. O. Lyday, Greensboro. From Section on Surgery.

2. "Factors Influencing Maternal Mortality in North Carolina." Dr. W. Z. Bradford, Charlotte. From Section on Gynecology and Obstetrics.
3. Guest Speaker: Dr. David R. Lyman, Wallingford, Conn. "Pregnancy and Tuberculosis."
4. "The Charlotte Medical Library." Dr. R. B. McKnight, Charlotte. (See also exhibit.)
5. "Conservation of Vision and the General Physician." Dr. Frank C. Smith, Charlotte. From Section on Opthalmology and OtoRhinoLaryngology.
6. "A Proposed County-City Venereal Disease Program." Dr. J. Roy Hege, Winston-Salem. From Section on Public Health and Education.
7. "Bronchoscopy in Childhood." Dr. V. K. Hart, Charlotte. From Section on Pediatrics.

11:45 a.m. Election two members State Board of Health.

12:00 m. Conjoint Session of the Medical Society of the State of North Carolina and the State Board of Health.

MEMBERS OF THE NORTH CAROLINA STATE BOARD OF HEALTH

Carl V. Reynolds, M.D., President, Raleigh
S. D. Craig, M.D., Vice-President, Winston-Salem
G. G. Dixon, M.D., Ayden
H. Lee Large, M.D., Rocky Mount
J. N. Johnson, D.D.S., Goldsboro
H. G. Baity, Sc.D., Chapel Hill
W. T. Rainey, M.D., Fayetteville
Hubert B. Haywood, M.D., Raleigh
James P. Stowe, Ph.G., Charlotte

EXECUTIVE STAFF

Carl V. Reynolds, M.D., Acting Secretary and State Health Officer.
G. M. Cooper, M.D., Assistant State Health Officer and Director Division of Preventive Medicine.
Warren H. Booker, C.E., Director Division of Sanitary Engineering.
Ernest A. Branch, D.D.S., Director Division of Oral Hygiene.
John H. Hamilton, M.D., Director Division of Laboratories and Vital Statistics.
J. C. Knox, M.D., Epidemiologist.
R. T. Stimpson, M.D., Vital Statistician.
R. E. Fox, M.D., Director Division of County Health Work.

FOURTH GENERAL SESSION

WEDNESDAY, MAY 8, 5:00 P.M.
(Ball Room)

1. Report of the House of Delegates.
2. Unfinished business.
3. New business.
4. Installation President, Dr. Paul H. Ringer and President-elect by retiring President, Dr. P. P. McCain.
5. Remarks by the President and President-elect.
6. Adjourn sine die.

SECTION MEETINGS

SECTION ON OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY

TUESDAY, MAY 7, 2:00 P.M.
(Men's Card Room)

Dr. B. W. Fassett, Durham, *Chairman*
Dr. Shahane R. Taylor, Greensboro, *Secretary*

1. Fassett, Dr. B. W., Durham (Chairman's Address)—"Non Cycliplegic Refraction."

2. Davis, Dr. Wm. Thornwall, Washington, D. C. (Invited Guest)—"Treatment of Squint by Orthroptic Training and Surgery."

3. Hicks, Dr. V. M., Raleigh—"Ocular Tuberculosis."

4. Fitzgerald, Dr. J. H., Smithfield—"The Diagnosis and Treatment of Acute Exudative Catarrah of the Middle Ear." Discussion, Dr. M. E. Bizzell, Goldsboro.

5. Brackett, Dr. W. E., Hendersonville—"Tumor of the Tonsil." Discussion, Dr. V. K. Hart, Charlotte.

6. Round table discussion on Ophthalmology. Led by Dr. Wm. Thornwall Davis, Washington, D. C.

7. Smith, Frank C., Charlotte—"Conservation of Vision and the General Physician." Before Third General Session, Wednesday, May 8th.

SECTION ON PRACTICE OF MEDICINE

TUESDAY, MAY 7, 2:00 P.M.
(Ball Room)

Dr. Verne S. Caviness, Raleigh, *Chairman*

1. White, Dr. T. Preston, Charlotte—"Pulmonary Asbestosis." Discussion opened by Dr. J. Rush Shull, Charlotte.

2. Johnson, Dr. Walter R., Asheville—"The Diagnosis and Treatment of Functional or Nervous Vomiting." Discussion opened by Dr. Wingate M. Johnson, Winston-Salem.

3. Clerf, Dr. Louis H., Philadelphia, Pa.—"Bronchoscopy as an Aid in the Diagnosis of Pulmonary Diseases."

4. Ashby, Dr. J. W., Raleigh—"Dementia Precox and the General Practitioner." Discussion opened by Dr. L. G. Beall, Black Mountain.

5. Yoder, Dr. Paul A., Winston-Salem—"Tuberculosis of Childhood and Childhood Tuberculosis." Discussion opened by Dr. J. H. Williams, Sanatorium.

6. Crowell, Dr. L. A., Jr., Lincolnton—"Pneumothorax Treatment of Lobar Pneumonia." Before First General Session, Tuesday, May 7th.

SECTION ON PUBLIC HEALTH AND EDUCATION

TUESDAY, MAY 7, 2:00 P. M.

(Ladies' Card Room)

Dr. J. C. Knox, Raleigh, *Chairman*

1. Norton, Dr. Roy, Rocky Mount—"The Control of Rabies."

2. Hardin, Dr. E. R., Lumberton—"Malaria Incidence as Shown by Blood Smear Index in a Typical Eastern North Carolina County."

3. White, Dr. C. H., Kenansville—"Intestinal Parasites as Found in Rural School Children in Duplin County."

4. Foster, Dr. M. T., Fayetteville—"The Control of Tuberculosis from a Public Health Standpoint."

5. Sumner, Dr. H. L., Asheville—"Diphtheria: Its Public Health Significance and Control."

6. Hege, Dr. J. Roy, Winston-Salem—"A Proposed County-City Venereal Disease Program." Before Third General Session, Wednesday, May 8th.

SECTION ON SURGERY

WEDNESDAY, MAY 8, 2:00 P. M.

(Ball Room)

Dr. B. C. Willis, Rocky Mount, *Chairman*

1. Brenizer, Dr. Addison G., Charlotte—"A New Method of Ureteral Transplantation and Removal of the Bladder."

2. Highsmith, Dr. DeCosta, Fayetteville—"Common Bile Duct Obstructions."

3. Royster, Dr. Hubert A., Raleigh, Haywood, Dr. H. B., Raleigh, Wilson, Dr. W. G., Smithfield—"Splenectomy for Banti's Disease."

4. McKnight, Dr. Roy B., Charlotte—"Surgical Considerations of Biliary Disease."

5. Haywood, Dr. Charles, Durham—"Experiences with Spinal Anesthesia at Watts Hospital Over a Five-year Period."

6. Rousseau, Dr. J. P., Winston-Salem—"X-Ray Value of Pre and Post Operative X-Ray Treatment in Breast Cancer."

7. Lyday, Dr. R. O., Greensboro—"Surgical Treatment in Non-collapsible Cavities." Before Third General Session, May 8th.

SECTION ON GYNECOLOGY AND OBSTETRICS

WEDNESDAY, MAY 8, 2:00 P. M.

(Ladies' Card Room)

Dr. E. C. Hamblen, Durham, *Chairman*

1. Johnson, Dr. George, Wilmington—"Uterine Bleeding." Discussion opened by Dr. R. T. Ferguson, Charlotte.

2. Rhudy, Dr. B. E., Greensboro—"Select Treatment of Benign Diseases of the Uterus." Discussion opened by Dr. R. O. Lyday, Greensboro.

3. Procter, Dr. Ivan, Raleigh—"Cancer of the Cervix; its Forerunning Pathology and Prevention." Discussion opened by Dr. George Carrington, Burlington.

4. Pratt, Dr. J. P., Detroit, Michigan—"Application of Endocrinology to Gynecology." Discussion opened by Dr. F. Bayard Carter, Durham.

5. Ross, Dr. R. A., Durham—"Paradoxes of Toxemia of Pregnancy." Discussion opened by Dr. Kermit Brown, Asheville.

6. Moore, Dr. Oren, Charlotte—"Unexpected Maternal Deaths in Obstetrics." Discussion opened by Dr. Richard Spicer, Winston-Salem.

7. Lee, Dr. Thomas Leslie, Kinston—"The Prevention of Puerperal and Post-Abortal Infections." Discussion opened by Dr. John C. Tayloe, Washington.

8. Bradford, Dr. W. Z., Charlotte—"Factors Influencing Maternal Mortality in North Carolina." Before Third General Session, May 8th.

SECTION ON PEDIATRICS

WEDNESDAY, MAY 8, 2:00 P.M.

(Men's Card Room)

Dr. W. Myers Hunter, Charlotte, *Chairman*

1. Hunter, Dr. W. Myers, Charlotte (Chairman's Address)—"The Present Outlook for the Premature."

2. Watson, Dr. Tom, Greenville—"Some Unusual Cases of Malaria." Discussion, Dr. J. Buren Sidbury, Wilmington.

3. Keith, Dr. Marion Y., Greensboro—"Etiology and Treatment of Pyuria in Children." Discussion, Dr. K. B. Geddie, High Point, and Dr. A. H. London, Durham.

4. London, Dr. A. H., Durham—"The Composition of Pediatric Practice." Discussion, Dr. W. C. Davison, Durham.

5. Faison, Dr. Yates, Charlotte—"The Interpretation of Skin Tests in Allergy." Discussion, Dr. S. Stewart Saunders, High Point.

6. Kutscher, Dr. G. W., Asheville—"Improvements in the Diagnosis of Childhood Tuberculosis." Discussion, Dr. Tom Watson, Greenville.

7. Crumpler, Dr. J. F., Wilmington—"Continuous Intravenous Drip in the Treatment of Acute Intoxication." Discussion, Dr. Tom Watson, Greenville.

8. Hart, Dr. V. K., Charlotte—"Bronchoscopy in Childhood." Before Third General Session, Wednesday, May 8th.

WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

OFFICERS

President—Mrs. J. Buren Sidbury.....Wilmington
President-elect—Mrs. C. P. Eldridge.....Raleigh
Chairman Board of Past Presidents—Mrs. P. P. McCain.....Sanatorium
First Vice-President and Chairman of Organization—Mrs. J. W. Huston.....Asheville
Second Vice-President and Chairman of Bed—Mrs. W. T. Rainey.....Fayetteville
Third Vice-President and Chairman of Loan Fund—Mrs. R. A. Schoonover
Greensboro
Treasurer—Mrs. E. C. Judd.....Raleigh
Corresponding Secretary—Mrs. A. H. Elliott.....Greensboro
Recording Secretary—Mrs. K. B. Pace.....Greenville

COUNCILLORS

First District—Mrs. Thomas L. Carter..... Gatesville
Currituck, Camden, Pasquotank, Perquimans, Gates, Chowan, Washington, Tyrell, Dare, Hyde.

Second District—Mrs. E. Bruce Beasley.....Fountain
Hertford, Martin, Pitt, Bertie, Beaufort, Lenoir, Jones, Craven, Pamlico, Carteret.

Third District—Mrs. J. C. Wessell.....Wilmington
New Hanover, Pender, Onslow, Duplin, Bladen, Sampson, Columbus, Brunswick.

Fourth District—Mrs. W. H. Cobb.....Goldsboro
Northampton, Halifax, Nash, Edgecombe, Johnston, Wilson, Wayne, Greene.

Fifth District—Mrs. A. B. Holmes.....Fairmont
Cumberland, Robeson, Scotland, Richmond, Moore, Harnett, Chatham, Lee, Hoke.

Sixth District—Mrs. C. T. Wilkinson.....Wake Forest
Wake, Franklin, Warren, Vance, Granville, Person, Caswell, Alamance, Orange, Durham.

Seventh District—Mrs. Reid Patterson.....Charlotte
Anson, Union, Stanley, Mecklenburg, Montgomery, Cabarrus, Lincoln, Gaston, Cleveland, Rutherford.

Eighth District—Mrs. W. P. Knight.....Greensboro
Rockingham, Guilford, Randolph, Forsyth, Stokes, Surry, Yadkin, Alleghany, Wilkes, Ashe.

Ninth District—Mrs. J. R. Terry.....Lexington
Davidson, Davie, Rowan, Iredell, Alexander, Catawba, Caldwell, Watauga, Burke, Avery.

Tenth District—Mrs. W. A. Brewton.....Enka
Buncombe, Yancey, McDowell, Madison, Polk, Henderson, Haywood, Transylvania, Jackson, Swain, Macon, Clay, Graham, Cherokee, Mitchell.

STANDING COMMITTEES

Public Relations—Mrs. R. D. McMillan.....Red Springs
Hygeia—Mrs. Fred Taylor.....High Point
Historian—Mrs. Julian A. Moore.....Asheville
Research—Mrs. Foy Roberson.....Durham
Memorial—Mrs. I. H. Manning.....Chapel Hill

MONDAY, MAY 6

2:00 p. m.—Drive to Sanatorium via Aberdeen and Southern Pines.
Tea at Montesanti's Spaghetti Camp.

7:15 p. m.—Executive Board Meeting (Room No. 22).

8:00 p. m.—Shirley Temple in "Our Little Girl" at Carolina Theatre, courtesy of Charles Picquet, Manager.

TUESDAY, MAY 7

9:30 a. m.—Opening Session, State Medical Society.
President's Address, Dr. P. P. McCain, Sanatorium.
Presentation of President's Jewel by the President-elect, Dr. Paul H. Ringer, Asheville.

10:30 a. m.—Executive Board Meeting (Men's Card Room).

11:00 a. m.—Annual Meeting (Men's Card Room).

2:30 p. m.—Jugtown Pottery Exhibit (Mr. Jacques Busbee) Jugtown favors.
Music Southern Pines High School Glee Club. Pinehurst Country Club.

6:30 p. m.—Dinner Meeting—Main Dining Room.

9:00 p. m.—President's Reception and Thirteenth Annual Medical Society Ball.

WEDNESDAY, MAY 8

9:30 a. m.—Executive Board Meeting (Room No. 22).

10:00 a. m.—Drive—Orchid Gardens.

INFORMATION FOR LADIES

1. Register on arrival and receive badge. $1.00 registration fee for all who have not paid 1934-1935 dues.

2. Wear badge to all functions.

3. No extra charge for dinner meeting for those stopping at The Carolina. $1.50 for others.

4. Ladies are asked to use their own cars where possible.

LADIES' ENTERTAINMENT COMMITTEE

Mrs. John Symington, *Chairman*.....Carthage
Mrs. W. C. Mudgett.....Southern Pines
Mrs. A. McN. Blair.....Southern Pines
Mrs. J. S. Milliken.....Southern Pines
Mrs. E. L. Prizer.....Southern Pines
Mrs. E. M. Poate.....Southern Pines
Mrs. P. J. Chester.....Aberdeen
Mrs. J. W. Dickie.....Southern Pines
Mrs. R. G. Rosser.....Vass
Mrs. A. McN. Blue.....Carthage

Mrs. Chas. T. Grier.....Carthage
Mrs. H. W. Bowman.....Aberdeen
Mrs. M. W. Marr.....Pinehurst
Mrs. P. P. McCain.....Sanatorium
Mrs. S. M. Bittinger.....Sanatorium
Mrs. J. S. Williams.....Sanatorium
Mrs. Alban Papineau.....Sanatorium
Mrs. W. F. Thornton.....Sanatorium
Mrs. Allison Ormond.....Sanatorium

TUESDAY, MAY 7, 11:00 A. M., MEN'S CARD ROOM

PROGRAM

MRS. J. BUREN SIDBURY, *President*, Presiding

Call to Order—Mrs. J. Buren Sidbury, President

Lord's Prayer

Greetings—Mrs. John Symington.....Carthage

Response—Mrs. E. Bruce Beasley.....Fountain

Memorial Service—Mrs. I. H. Manning.....Chapel Hill

Business Session—

Minutes—Mrs. K. B. Pace.....Greenville
Treasurer's Report—Mrs. E. C. Judd.....Raleigh
First Vice-President and Chairman of Organization—
Mrs .J. W. Huston.....Asheville
Second Vice-President and Chairman of Bed—
Mrs. W. T. Rainey.....Fayetteville
Third Vice-President and Chairman of Loan Fund—
Mrs. R. A. Schoonover.....Greensboro

Report from the American Medical Auxiliary—Mrs. M. L. Stevens.....Asheville
Director, Woman's Auxiliary to the A. M. A.

Reports of Standing Committees:

Public Relations—Mrs. R. D. McMillan.....Red Springs
Hygeia—Mrs. Fred R. Taylor.....High Point
Historian—Mrs. Julian A. Moore.....Asheville
Publicity—Mrs. P. P. McCain.....Sanatorium
Poster—Mrs. Sidney Smith.....Raleigh
The poster which will be sent to the American Medical Association meeting will be exhibited at this time.

Report of Courtesy Committee—Mrs. J. A. Martin.....Lumberton

President's Report—Mrs. J. Buren Sidbury.....Wilmington

Greetings from the Medical Society—Dr. P. P. McCain, President

Sketch by Research Chairman—Mrs. Foy Roberson.....Durham

Guest Speaker—Mrs. J. Bonar White, Atlanta, Ga., President Auxiliary to the Southern Medical.

Election of Officers

Installation of Officers—Mrs. P. P. McCain, Organizing President

Announcements—Mrs. C. P. Eldridge, Incoming President

Adjournment

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

Twenty-Fifth Annual Meeting

MONDAY, MAY 6, 1935

(Ladies' Card Room)

President—Dr. Z. P. Mitchell, Weldon
Secretary—Dr. G. Fletcher Reeves, Goldsboro

PROGRAM

9:30 a. m.—Registration

9:45 a. m.—Invocation

10:00 a. m—President's Address—Dr. Z. P. Mitchell, Henderson

10:30 a. m.—"The Value of the Preventorium in a Tuberculosis Program"
Dr. D. G. Caldwell, Concord

11:00 a. m.—"The Health Officer and School Medical Inspection"
Dr. N. Thomas Ennett, Greenville

11:30 a. m.—Paper—Dr. John H. Hamilton, Director State Laboratory, Raleigh

12:00 m. Resolutions and appointment of Committees

Noon Recess

2:00 p. m.—Paper—by request—Miss McIver, U. S. Public Health Service

2:30 p. m.—"Insects and Public Health"—Dr. Roy Norton, Rocky Mount

3:00 p. m.—Sanitation—Division of Sanitary Engineering, State Board of Health

3:30 p. m.—Reports of Committees
Announcements

Evening Session

8:00 p. m.—Address—Dr. C. C. Applewhite, Regional Consultant, U. S. Public Health Service, Columbia, S. C.

Old Business

New Business

Election of Officers

Adjournment

TRANSACTIONS

OF THE

EIGHTY-SECOND ANNUAL MEETING

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

PINEHURST, MAY 6-8, 1935

SESSIONS OF THE HOUSE OF DELEGATES

MONDAY EVENING, MAY 6, 1935

. . . The first session of the House of Delegates of the Medical Society of the State of North Carolina convened in the ballroom of the Carolina Hotel, Pinehurst, North Carolina, on Monday, May 6, 1935, at 8:15 o'clock p. m., with Dr. P. P. McCain, President of the Society, presiding.

President McCain: The House of Delegates will please come to order.

The Secretary, Dr. McBrayer, will call the roll.

. . . Dr. L. B. McBrayer, Secretary, called the roll, and the following delegates were present:

ROLL CALL

County	*Delegate*
Alamance-Caswell	George L. Carrington
Anson	N. E. Lubchenko
Avery	E. H. Sloop
Beaufort	
Bertie	
Bladen	
Brunswick	
Buncombe	M. L. Stevens, J. W. Huston, Julian A. Moore, W. L. Grantham
Burke	J. W. Vernon
Cabarrus	
Caldwell	A. B. Goodman
Carteret	Ben F. Royal
Catawba	
Chatham	
Cherokee	
Chowan-Perquimans	G. E. Newby
Cleveland	J. W. Harbison, Ben Gold
Columbus	T. V. Moore
Craven	

Cumberland.....J. F. Highsmith, Sr.
Currituck .....
Davidson.....J. R. Terry
Davie.....
Duplin.....
Durham-Orange.....W. B. McCutcheon, W. C. Davison, W. M. Coppridge
Edgecombe-Nash.....Roy Norton
Forsyth.....R. A. Moore, S. D. Craig, R. R. Garvey
Franklin .....
Gaston.....L. N. Glenn
Gates.....T. L. Carter
Granville.....N. C. Daniel
Greene.....
Guilford.....W. F. Cole, C. W. Banner, D. W. Holt, S. R. Taylor, Wm. M. Jones
Halifax.....W. G. Suiter
Harnett.....W. P. Holt, Sr.
Haywood.....J. F. Abel
Henderson.....
Hertford.....
Hoke.....S. M. Bittenger
Hyde.....
Iredell-Alexander.....James W. Davis
Jackson.....
Johnston.....S. A. Duncan
Jones.....
Lee.....
Lenoir.....Paul Whitaker
Lincoln.....L. A. Crowell
McDowell.....
Macon-Clay.....
Madison .....
Martin-Washington-Tyrrell .....
Mecklenburg.....W. S. Rankin, Reid Patterson, R. B. McKnight, B. C. Nalle, Jas. M. Northington
Mitchell.....C. A. Peterson
Montgomery.....
Moore.....H. E. Bowman
New Hanover.....W. Houston Moore, E. S. Bulluck
Northampton.....
Onslow.....L. D. Bryan
Pamlico.....
Pasquotank-Camden-Currituck-Dare.....C. B. Williams
Pender.....
Person.....
Pitt.....K. B. Pace
Polk.....M. C. Palmer
Randolph .....
Richmond.....
Robeson.....Roscoe D. McMillan
Rockingham.....J. W. McGehee
Rowan.....I. E. Shafer
Rutherford.....
Sampson.....
Scotland .....
Stanly.....C. M. Lentz

Stokes.....
Surry-Yadkin.....R. C. Mitchell
Swain.....
Transylvania.....
Union.....H. C. Whims
Vance.....H. A. Newell
Wake.....P. G. Fox, N. H. McLeod, Verne Caviness, V. M. Hicks
Warren.....G. H. Macon
Watauga-Ashe.....
Wayne.....H. B. Ivey
Wilkes.....
Wilson.....G. W. Mitchell
Yancey.....

SECRETARY MCBRAYER: Mr. President, the roll is called, and I should like to announce, in connection therewith, that, compared with last year, there are 25 counties that have one hundred per cent membership, and there are six counties that have not any paid-up member in them. We have a total of 1502 paid-up members, with a few to add to that number that came in Sunday—about 15, I think. There are 212 honorary fellows, which leaves us at this time 1290 paid-up members. That is 300 members more than we had at the time of the meeting last year. At the close of the fiscal year, January 1st, we had 1612 paid-up members, so we are within 110 of having as many members now as we had at the close of the last year (December 31st). I am quite sure we shall have more than 1612 this year. There are at least four or five hundred additional men who ought to pay their dues in the State.

PRESIDENT MCCAIN: We will have the reading of the minutes of the House of Delegates and of the Executive Committee meetings. Dr. McBrayer.

SECRETARY MCBRAYER: I take it, Mr. President, that they do not want me to read the minutes that were printed in the Transactions. I move you, sir, that the minutes printed in the Transactions be approved.

. . . This motion was seconded; carried.

THE PRESIDENT: We will have the reading of the minutes of the Executive Committee meetings.

SECRETARY MCBRAYER: I will say, gentlemen, that this stack of papers is the minutes of the four sessions of the Executive Committee during the year—a little less than a hundred pages. The Executive Committee has been very active during the year, hence these long minutes. These minutes have been approved by the Executive Committee at each succeeding meeting. If you want them read, I shall be delighted to read them. If you want to approve them as approved by the Executive Committee, all right.

On motion the minutes of the Executive Committee meetings were approved.

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

RALEIGH, JUNE 1, 1934

The meeting of the Executive Committee was called to order by the President, Dr. P. P. McCain, at 10:10 a. m., Friday, June 1, at the Sir Walter Hotel, Raleigh.

The following were present:

Dr. P. P. McCain, President.....Sanatorium
Dr. Paul H. Ringer, President-elect.....Asheville
Dr. L. B. McBrayer, Secretary-Treasurer.....Southern Pines

COUNCILLORS

Dr. C. B. Williams, Elizabeth City.....First District
Dr. K. B. Pace, Greenville.....Second District
Dr. J. F. Robertson, Wilmington.....Third District
Dr. E. S. Boice, Rocky Mount.....Fourth District
Dr. Roscoe D. McMillan, Red Springs.....Fifth District
Dr. W. M. Coppridge, Durham.....Sixth District
Dr. Forest M. Houser, Cherryville.....Seventh District
Dr. Roy C. Mitchell, Mount Airy.....Eighth District
Dr. J. R. Terry, Lexington.....Ninth District
Dr. G. W. Murphy, Asheville.....Tenth District
Dr. Benj. J. Lawrence, Chairman Committee on Legislation.....Raleigh
Dr. C. C. Carpenter, Chairman Committee on Cancer.....Wake Forest
Dr. I. H. Manning, Past President.....Chapel Hill
Dr. Geo. L. Carrington.....Burlington
Dr. A. R. Shands.....Durham
Dr. H. B. Ivey, President Radiological Society.....Goldsboro
Dr. John H. Hamilton, representing the State Board of Health.....Raleigh

The first item for discussion was Immunization. The President asked Dr. McBrayer to give them the gist of the matter. Dr. McCain stated Dr. Parrott had asked for a committee to confer with the committee of health officers with perhaps representation from the State Board of Health in the matter of immunization. On motion of Dr. McMillan seconded by Dr. Lawrence, the President was authorized to appoint a committee, the committee to understand that there were no funds at this time to take care of expenses. Dr. Lawrence offered the suggestion that this ought to be done by the general practitioners in each county which was agreed to. Dr. McBrayer made a motion that we approve the recommendation of the President that we try to get through the legislature a bill requiring the immunization of children against diphtheria between the age of six months and one year, the law to be framed if possible so that the work will be done by the private practitioner. Motion carried.

Dr. Carpenter, Chairman of the Committee on Cancer, presented a complete explanation of his report to the House of Delegates. Dr. H. B. Ivey, President of the Radiological Society, explained the attitude of the Radiological Society in regard to Dr. Carpenter's report. Dr. G. W. Murphy, Past President of the Radiological Society, also discussed the matter.

Dr. Murphy made a motion that all that part of the report of the Committee on Cancer referring to Mother Cancer Hospital be deferred and that Dr. Carpenter, Chairman, be requested to proceed along these lines and report back to the Executive Committee in greater detail before any action is taken. Motion was seconded by Dr. Houser and the motion unanimously passed.

Dr. McBrayer made a motion on the request of Dr. Carpenter that the reference in his report to a "Mother Clinic" be deleted from the report which was seconded by Dr. Ringer. Motion passed.

Dr. Carpenter also discussed item 4 of his report and asked to have inserted: "That the Cancer Committee through each County Medical Society be given authority to direct the activities of the Federation of Women's Clubs in their study of Cancer Control in the state." Dr. Carpenter stated that item 5 in regard to radio broadcasting and newspaper releases was suggested by the American Society for the Control of Cancer. Dr. Ringer made a motion that the clause "with the approval of the Public Relations Committee" be added to item 5, which was seconded and the motion carried.

Dr. Ringer made a motion that we adopt Dr. Carpenter's report as amended, which was unanimously carried.

Dr. Ivey presented a motion passed at the Radiological Society meeting that the attention of the doctors be called to the limitation of small x-ray machines and what they will and will not do. That they are a dangerous instrument to use without having proper information and that they refrain from purchasing these machines until they had investigated the matter through other channels than the enterprising salesmen. Dr. Murphy made a motion that the next time the Secretary for any reason writes a letter to the fellows of the Society that he insert a paragraph that it has been brought to the attention of the Executive Committee the importance of the doctors refraining from purchasing these machines until they had investigated the matter through other channels than the enterprising salesmen. Motion carried.

Dr. Shands announced a two-day clinic on fractures at Duke University in September, starting Friday morning and running three sessions on Friday and one session Saturday morning, taking up the discussion of every important fracture and try to cover all fractures. The plan is to put on a real practical fracture teaching course for any one who would be interested in coming.

1935 program.

Dr. McBrayer made a motion for the next meeting that we have the second session of the House of Delegates at 2 p. m. on Wednesday. Dr. Lawrence seconded the motion and it was unanimously carried. Otherwise the skeleton of the program to be the same as last year.

Dr. Carrington presented Mr. Melvin, Secretary of the Committee of State Hospital Association and Mr. Graham Davis, member of the Committee on Public Relations of the Hospital Association in regard to group hospital insurance. They requested that a joint committee from the Medical Society of the State of North Carolina and the North Carolina Hospital Association be formed to study the matter of group hospitalization and if possible, put into effect a non-commercial organization to organize and direct the same, the Hospital Association and the State Medical Society to be and remain in control. They stated further that a committee had been appointed to this end by the Hospital Association and requested that a like committee be appointed from the Medical Society of the State of North Carolina.

Dr. Lawrence moved that we accept the invitation of the North Carolina Hospital Association through their committee to unite with them in an endeavor to establish non-commercial hospital insurance in this state, the State Hospital Association and the Medical Society of the State of North Carolina to always remain in control and that the President be authorized to appoint a committee at least two of whom should be physicians in private practice, not hospital owners, to carry this into effect and that they report their findings to this Executive Committee before final action is taken. Motion carried.

At the request of Mr. Davis, Dr. Manning moved that the publications for the public of the Hospital Association be referred to the Public Relations Committee of the Medical Society of the State of North Carolina for approval or otherwise. Motion carried.

Dr. Coppridge, Chairman, and Dr. Peery presented supplementary report of the Finance Committee as per instructions from the House of Delegates.

The committee first stated that it was impossible for the Society to run as it ought to for the current year without an additional income of some $1500. They asked Dr. McBrayer as to the amount of money collected so far. He reported that he had 1499 members, less 206 Honorary Fellows, making a total of 1293 paying members, which amounted to $6465. While he expected to get a few more members he didn't think we could possibly depend on more than 50 to 100 additional. He also reported that he had sent a roster of the unpaid members to each Councillor for his district with the request that they get in touch with them and in addition Dr. McCain had issued a letter to the 460 supposedly doctors who were not members of the society.

Various ways were suggested for reducing expenses and securing funds: first, to ask two or three hundred doctors to make contributions.

Second, that the Councillors visit the county medical societies or ask the President to meet with them and have the whole group take part in this matter, raising what they could in any way they could. Third, it was suggested that the Councillors and members of the Executive Committee and other committees forego their travel expense for the year. Fourth, it was suggested that the members be asked to pay $2.00 each for the transactions this year and that the printer be asked to cancel his contract and only print whatever number copies would be needed, that in order to set this in motion the Secretary get out a letter to all the members with return postal and ask whether or not they would be willing to pay $2.00 for the Transactions this year, all of which was agreed to in principle. Along this same line Dr. Lawrence moved that the Finance Committee notify Dr. Northington that while we admitted that we owed the doctor the $700 as per the action of the House of Delegates, that on account of the condition of the treasury at this time it was impossible for us to pay the whole amount and that we could not pay more than $200 annually and that we would send him $200 as soon as a dividend was had from the Page Trust Company, which was expected within a month. The Secretary was notified to make such payments of not more than $200 annually if the condition of the treasury would allow. Motion carried.

The Finance Committee suggested that we give serious consideration to raising the dues. $7.00, $8.00 and $10.00 were mentioned. On motion of Dr. McMillan the Executive Committee agreed to recommend to the House of Delegates the increase of the dues to $10.00 annually.

The three items presented to the House of Delegates by the State Board of Health and referred to the Executive Committee were taken up. Item one, two and three were on motion approved and the President was authorized to appoint a committee to carry items two and three into effect.

The matter of a committee to pass on contested bills in coöperation with the Industrial Commission had already been approved by the House of Delegates and Dr. McCain presented for the committee Drs. Donnell Cobb, Chairman, F. C. Smith, B. A. Hocutt. Alternate committee: Drs. J. W. Davis, G. W. Murphy, W. G. Suiter. On motion of Dr. Ringer, the committees were approved.

The special committee of ten appointed by the Legislative Committee to serve with them had been appointed by the Chairman of the Legislative Committee as provided in the motion of Dr. McKnight and approved by the President, as follows:

1. Dr. T. L. Carter, Gatesville
2. Dr. Vance P. Peery, Kinston
3. Dr. W. Houston Moore, Wilmington
4. Dr. H. B. Ivey, Goldsboro
5. Dr. W. D. James, Hamlet
6. Dr. Z. M. Caviness, Raleigh
7. Dr. John Stuart Gaul, Charlotte

8. Dr. H. B. Hiatt, High Point
9. Dr. Ross S. McElwee, Statesville
10. Dr. Carl V. Reynolds, Asheville

On motion of Dr. Lawrence, Chairman, the committee of ten was approved by the Executive Committee. It is with regret that the Executive Committee advises them that there are no funds at this time with which to pay their expenses.

Dr. McBrayer moved that Dr. Wingate M. Johnson be named alternate delegate for Dr. D. A. Garrison to the American Medical Association.

No further business appearing, on motion adjourned.

Respectfully submitted,

L. B. McBrayer,
Secretary-Treasurer.

MINUTES EXECUTIVE COMMITTEE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Hotel Kinston, Kinston

November 9, 1934

The meeting of the Executive Committee called to meet in Raleigh was changed to Kinston on account of the death of Dr. James M. Parrott in order that the members could attend the funeral at 2:30.

Meeting called to order by the President, Dr. P. P. McCain, at 10:30 a. m., Friday, November 9, Kinston Hotel, Kinston.

The following were present:

Dr. P. P. McCain, President.....Sanatorium
Dr. Paul H. Ringer, President-elect.....Asheville
Dr. L. B. McBrayer, Secretary-Treasurer.....Southern Pines

COUNCILLORS

Dr. C. B. Williams.....Elizabeth City
Dr. K. B. Pace.....Greenville
Dr. E. S. Boice.....Rocky Mount
Dr. Roscoe McMillan.....Red Springs
Dr. W. M. Coppridge.....Durham
Dr. Forest M. Houser.....Cherryville
Dr. R. C. Mitchell.....Mount Airy
Dr. J. R. Terry.....Lexington
Dr. G. W. Murphy.....Asheville
Dr. Benj. J. Lawrence, Chairman, Committee on Legislation.....Raleigh
Dr. Carl V. Reynolds, President, State Board of Health.....Asheville
Dr. G. M. Cooper, Acting State Health Officer.....Raleigh
Dr. J. T. Burrus.....High Point

Dr. H. B. Ivey.....Goldsboro
Dr. DeWitt Kluttz.....Washington
Dr. I. H. Manning.....Chapel Hill
Dr. Vance P. Peery.....Kinston
Dr. J. F. Highsmith.....Fayetteville
Dr. C. C. Phillips .....Charlotte

The President called for the reading of the minutes of the last meeting but as copies of these had previously been mailed to every member of the Executive Committee, Dr. Ringer made a motion that the reading of the minutes be dispensed with and be approved as they stand. Seconded by Dr. Williams and unanimously carried.

Dr. McBrayer presented report of the State Advisory Committee to the State Administrator of Relief as follows:

"This committee, composed of the President, President-elect, and Secretary, Dr. John B. Wright, Dr. Hubert Haywood and Dr. C. F. Strosnider, has after many efforts had two conferences with the State Director of Relief, the last one November 5.

"This committee was able to secure a considerable increase in the fees to be paid in the future for medical service to medical relief cases. Copy of the new fee bill is attached hereto.

"This will go into effect when and if it is approved by this Executive Committee and the President has already instructed the Secretary to send this out to each member of the State Society along with perhaps a good deal of other information that will become effective at this meeting.

"In this last conference Mrs. O'Berry has been exceedingly gracious and seemed to be perfectly willing to give us all the time that was necessary in order to go over in great detail things which we presented. While we didn't in every instance get the exact amount we asked for, we do feel that the compromise is more or less satisfactory and considering the class of people it covered, is probably a reasonable amount.

"We must have a functioning advisory committee to the County Relief Administrator in every county medical society. Each Councillor is expected to help secure this."

On returning to the office we found a letter from Mrs. O'Berry, State Director of Relief, advising that Mr. Hopkins, U. S. Director of Relief, had appointed a Medical Director on the medical phase of the work and that the Fee Bill would now have to be approved by him though she had no doubt as to its approval. As soon as this is received copy will be forwarded to you.

Dr. Houser made a motion that the report be accepted, seconded by Dr. McMillan. Unanimously approved.

Dr. McCain stated that a telegram from Dr. Wingate M. Johnson, Chairman of the Committee on Public Relations advised he could not be present. The President called on Dr. McBrayer for any report he could

make. Dr. McBrayer stated that to his knowledge there had been no meetings of this committee but that he felt there was not enough newspaper publicity and he had so advised the Chairman of this Committee and nothing being forthcoming he personally wrote some articles which were published by some state papers, while others did not use them.

Dr. Lawrence, Chairman of the Committee on Legislation, reported his committee had not met but that the enlarged committee appointed by the House of Delegates, consisting of ten members, one from each councillor district, met in Raleigh in July. Each member of the committee was sent a copy of the matters discussed, copy of which Dr. Lawrence had, the primary thing in it being the presentation of the fee bill of the Industrial Commission. He further stated another meeting would be called about December 15 at which time they would have the crystallized thought of the medical profession throughout the state. The committee has not clearly outlined any matters to be presented to the General Assembly. Dr. Lawrence considered the amendment to the 1933 act which permitted the injured employee to select his own physician which was passed in 1933 very helpful. He stated the whole time employment of our present Secretary to his mind seemed very essential. He also brought out the need of the Society for legal counsel which brought forth the motion that the Executive Committee authorize and instruct the President and Secretary with the Chairman of the Committee on Legislation to employ such legal counsel and advice as they think we need to handle the matters of interest to the medical profession. Motion seconded by Dr. Mitchell. Motion adopted.

Dr. Burrus asked the permission of the President to speak and he also approved the need of a whole time and all pay Secretary.

Dr. Ringer made a motion that the Chairman of the Legislative Committee find out what the least amount the services of this lawyer could be had for and then advise the President, to which Dr. Lawrence very readily agreed.

After some discussion Dr. McCain put Dr. Ringer's motion, which was unanimously approved.

Dr. McBrayer made report for the Committee on Industrial Commission as follows:

"The President and Secretary with Dr. Hubert Haywood shortly after the appointment of Mr. McMullan as Chairman of the Industrial Commission had a conference with him and he was more or less familiar with the things that had preceeded over a period of more than a year in our various conversations with Mr. Allen both personally and through the Governor, and was in hearty accord with all the plans that had been reached and was ready to begin to use the Committee from the State Medical Society to discuss with them bills that seemed to be too high or too low.

"We cannot make you understand I am quite sure the cordial and harmonious idea of good will that was indicated by the Commission at this conference, since which time the Committee from the State Medical Society composed of Dr. Donnell B. Cobb, Chairman, Goldsboro, Dr. Battle A. Hocutt, Clayton, and Dr. F. C. Smith, Charlotte, have held a meeting with the Commission on October 29. We have had no report from them but feel sure that everything went off well.

"These meetings with the committee are only to be held for the present every three months and the Commission pays each one of the committee of three $5.00 for each meeting to take care of his expenses.

"We feel sure that the appointment of Mr. McMullan is the beginning of a new and cordial relationship between the medical profession and the Industrial Commission.

"The agreement provides that where a bill is considered too high and the Commission cuts it, they will pay the amount authorized by the cut immediately and the remainder will wait until the meeting of the Medical Society committee with the Commission without any prejudice to the doctor whose bill was cut. Understand that the Commission has the final action according to law on the approval of the bill, but I am sure they will give due consideration to the opinions of this committee.

"This committee was not appointed for any definite length of time but the understanding was that because of the heavy duties the committee would not be asked to serve indefinitely but would be relieved at intervals and another committee appointed. Incidentally, the committee itself must be satisfactory to the Commission."

Dr. McBrayer introduced a resolution in regard to automobile accidents from Pitt County which was read from a letter received from Dr. Pace, Councillor Second District, and suggested if satisfactory to Dr. Pace that this be referred to the Committee on Legislation, which was agreed to.

Dr. Kluttz cited a case in which he had asked Dr. Lawrence to investigate the law as regards osteopathy and he found an osteopath according to the law as written could do most anything. Dr. Lawrence asked for an expression from the Executive Committee as to the wisdom or lack of wisdom of opening this question up in the courts of North Carolina and stated that they are legally authorized to practice medicine. Personally he thought this very unwise.

Dr. Highsmith stated he thought what the Medical Society needed was an honest to God good lawyer that can press the button and touch the medical profession of North Carolina at the right time and not say too much about it and get this law amended.

Dr. McBrayer stated that if satisfactory to everybody he made a motion that all these matters be referred to the Legislative Committee to do as they think best at the time and further suggested that Dr. Kluttz put the things down in writing so Dr. Lawrence would have it before him. Motion adopted.

Dr. McCain stated how fortunate the Medical Society is in having a man with Dr. Burrus' influence in the General Assembly this year.

Dr. Coppridge made a report as Chairman of the Finance Committee that the year would end with a deficit and the question was immediately raised to increase the dues to $10 or charge for the Transactions, the general opinion seemed to be that it would be a good idea to have some general meeting of the profession of the State. That the President call a meeting of certain groups of county societies; have Dr. Lawrence explain what the Legislative Committee had in view; Dr. Manning explained what an immense ammount of work he has done on the Committee for Hospital Care.

Dr. Houser thought the above idea very good, that if the President would call together a representative group from all over the State and let them know what the State Medical Society is trying to do for the medical profession that it would have a great deal of influence. He stated he either wasn't a good collector or didn't get the information across, as he had no results.

Dr. Mitchell stated his experience with most of the societies in his district had been just what Dr. Houser had said.

Dr. Ringer suggested that we omit all the reporting and sell the Transactions to those who wished them.

Dr. Williams asked just how much would be saved if we cut out the Proceedings of the North Carolina Public Health Association. Also made the point that the fifty pages devoted to the names of the profession be left out.

Dr. McBrayer advised that the names of the members of the Society as published in the Transactions were rather important as this information is used all over the United States. How many ever read the Transactions he stated it would be very difficult to find out but that a great many doctors keep the volume constantly before them and use it every day. When you want to wire somebody in Gates County, Perquimans or Pasquotank, you go to the book and get the name. If you are going to send out a reprint you go to the book. All the universities and libraries are keeping a complete file of the Transactions and the State Librarian at Raleigh says the file kept there is used more than any other set of books.

Dr. Highsmith stated that the Transactions is the most constructive piece of literature we have.

Dr. Ringer didn't want to go on record as not favoring publishing the Transactions.

Dr. Burrus values the Transactions as the most valuable book in his library, uses it every day all the time. He thought a law ought to be passed as long as the Medical Society of the State of North Carolina maintains its charter it must publish the Transactions every year.

Dr. Coppridge wondered even on the basis of $10 dues if we could continue to give away the Transactions. Of the $5 dues $2.50 goes to publish the Transactions.

Dr. Mitchell stated by not printing the Transactions except for those who wish them and let those who want them pay for them, then we have raised the dues.

Dr. Lawrence made a motion that the President together with the Secretary at such date as they think wise, either during the latter part of December or early part of January, call a special meeting at some central part of the State, invite every doctor in North Carolina through the press or otherwise, invite a special group of 200 or 300 men who would be enough interested in the science of medicine to attend this called meeting, at which time this and other matters might come up for discussion.

The President asked Dr. Ringer, President-elect, to assume the chair.

Dr. McCain stated the idea of having a large group of representative doctors from all parts of the State come together in order that they be acquainted with the problems of the Society and the necessity of raising dues was fine theoretically, but that he felt it was not practical because it would not be possible to get a much larger group together than was present at this Executive Committee meeting and that such a gathering would have no authority and probably not be able to aruose much more enthusiasm than would all those present at this Executive Committee meeting. Dr. McCain further stated that he was very anxious to do what the Executive Committee wants but he thought it a better plan to get further data on the various possibilities before we go to Pinehurst and have an Executive Committee meeting the afternoon before the meeting of the House of Delegates and then go to the meeting of the House of Delegates with some definite facts and try to arouse the necessary enthusiasm there.

Dr. Lawrence asked that he be allowed to withdraw his motion at the request of the President but the President first asked for a vote on Dr. Lawrence's motion, three voting for, six against the motion.

Dr. Pace then made a motion that the matter of raising the dues and handling the Transactions of the Medical Society be left with the Finance Committee.

Dr. McBrayer made the point of order that at the last meeting of this Executive Committee motion was made and unanimously adopted that we recommend to the House of Delegates that the dues be fixed at $10. With all due respect to Dr. Pace it seems impossible to refer the matter of the amount of dues to a committee after we had already passed on it once, unless we reconsider the motion by which we adopted the recommendation of the $10 fee. President McCain ruled that the point of order was well taken.

Dr. McBrayer suggested that the further consideration of the matters of the Executive Committee be postponed until immediately after Dr. Parrott's funeral and the meeting was adjourned for lunch and all attended Dr. Parrott's funeral.

Immediately on the arrival of the members of the Executive Committee Dr. Manning reported as Chairman of the Committee on Hospital Care. After much discussion and reading of the amendment by the Executive Committee of the North Carolina Hospital Association on motion the whole matter was referred to the Joint Committee for further study and report.

Dr. Manning proposed the following resolution which was unanimously adopted:

The Executive Committee of the Medical Society disapproves of Group Hospitalization conducted as a commercial enterprise by any insurance company, agency, organization or individual as tending towards the commercialization and exploitation of the hospitals' subscribers and the medical profession and lowering the standards of medical and hospital practice. Resolution adopted.

Dr. Kluttz, Dr. Murphy and Dr. Ivey offered objection to placing the roentgenologists on a basis of an x-ray technician and claimed that they were practicing medicine the same as the surgeons and other physicians.

The President asked Dr. Ringer to assume the chair.

Dr. McCain stated it seemed to him that the point of the radiologists was well taken and he didn't see how we could be fair to them if we sold the contract as worded. Stated he would like to know from Dr. Manning if any statistics had been worked out showing what proportion of the cost of hospital care was required to take care of the cost of the technical x-ray and the professional charges for x-ray services. Dr. Manning replied that it is included in Watts Hospital and further stated that he felt all hospitals should have an x-ray outfit. If the radiologists want to be classed as professional men then they come in the class of all professional men and no provision can be made in this set-up to pay them. If this program is not what it should be let us make it so as we don't want to start it until all are agreed.

Dr. McBrayer made a motion that the radiologists be put on the same basis with the other doctors who are treating these patients and their specialty be excluded from this price of $4.00 per day. Motion seconded by Dr. Mitchell and unanimously approved.

SUGGESTIONS FOR PROPOSED CHANGES TO THE PLAN FOR GROUP HOSPITALIZATION INSURANCE PRESENTED BY DR. I. H. MANNING AT THE MEETING OF THE DIRECTORS OF THE NORTH CAROLINA HOSPITAL ASSOCIATION, DURHAM, NORTH CAROLINA, ON SEPTEMBER 5, 1934.

1. That the general plan of organization be adopted.

2. (a) That the Executive Committee appointed from the Board of Directors be men who are active in the organization, and that they be

given wide powers of adjusting and changing premium rates, within prescribed limits.

(b) That the Executive Committee be given power for a period of one year to adjust compensation paid to hospitals on the basis of the patient day cost; that the general plan be to allow the individual hospitals as near their regular rates as possible. This is necessary during the first year only in order to obtain sufficient experience and data to arrive at a definite rate of compensation which then can be fixed more permanently.

3. That an income limit for the insurance offered in the lower premium rate group be fixed (which offers ward service only); this to be somewhere between $1,000.00 and $2,000.00 per annum.

4. That the North Carolina Hospital Savings Association offer also a policy for hospital care which has no income limit; that the basis of this policy be to pay hospitals for private room service and include all extras; that the premium rate be fixed to compensate for the service offered. This I think is essential, as the present plan of policyholders paying extra for private room service will not be practical, and there is no reason for discriminating against the high income groups in refusing to write a policy which covers them as well as the lower income group. There should be considerable difference, however, between the premium rate of the lower income group and the higher. I feel that this is a vital part of any organization which is formed. I do not feel it necessary to include semi-private room differentiation as the hospitals can adjust this themselves without difficulty.

5. That we favor the merging into one association the proposed North Carolina Hospital Savings Association and the Durham Hospital Care Association, with Mr. Snyder as executive secretary of the new organization.

6. That the financing of the organization be—

   a. An assessment of the participating hospitals of $2.00 a bed, to accumulate a working capital.
   b. The extension by participating hospitals of a reserve credit up to $5.00 a bed.
   c. Both the working capital and the reserve credit be held by the participating hospitals and be drawn upon by the Executive Committee only as and when found necessary.
   d. That we ask for a loan of $10,000.00 from individuals or foundations, as a promotion capital to be used during the first year.
   e. The money obtained from the hospitals as bed assessments, credit extension, and as loans from individuals or foundations, be paid back as soon as possible by the North Carolina Care Association from its reserve fund accumulated in excess of operation expenses during operation.

7. That the general plan be to lower the premium rate on the lower income group as rapidly as is permissible with economy and safety during

the growth of the organization. But that a reserve surplus be built up only large enough to place the organization on a firm foundation.

8. That we favor the appointment of a local or district committee composed of a representative from each hospital in the district and representative from the local Medical Society to act in an advisory capacity in fixing hospital compensation and premium rates for subscribers.

9. We suggest that this plan be extended over the State as rapidly as there is a local demand and is feasible to form a local committee.

(Signed) JOHN F. BROWNSBERGER,
ROBERT W. ROSS,
M. E. WINSTON.

Dr. Terry made a motion to refer the whole matter to the joint Committee on Group Hospitalization for further study and recommendation. Motion adopted.

Dr. McCain called attention to the fact that this morning we ceased discussion on the matter of finances of the Medical Society.

Dr. Ringer moved the adoption of the following: Resolved, that the matter of reporting discussions and reporters shall be dispensed with for the next session, except that the Secretary shall provide a reporter for the sessions of the House of Delegates; and any discussion which may be furnished the Secretary by the discussant within five (5) days following the close of the session shall be printed at the proper place in the forthcoming volume of the Transactions, provided it is approved by the committee on printing. Seconded by Dr. McBrayer. Unanimously approved.

Dr. Murphy made a motion that the Secretary draw up suitable resolutions in regard to Dr. Parrott's death, which follows:

RESOLUTIONS

The Executive Committee of the Medical Society of the State of North Carolina in session at Kinston records its sorrow over the passing of Dr. James M. Parrott, our State Health Officer.

Dr. Parrott has been a leader in the medical profession in all its various activities for many years. Has held all the offices in the gift of the Medical Society of the State of North Carolina except that of Secretary-Treasurer.

He is an Honorary Fellow of the Medical Society of the State of North Carolina and is much beloved by the physicians of North Carolina in every part of the State and we are sure that they join us in sorrowing for his passing.

To his wife, daughter and son we extend our sincere sympathy. May the God of hosts bear them up in their grief.

Respectfully submitted,
The Executive Committee of the Medical Society of the
State of North Carolina.

(Signed) DR. P. P. MCCAIN, *President,*
(Signed) DR. L. B. MCBRAYER, *Secretary-Treasurer.*

Dr. McBrayer expressed his personal appreciation to Dr. Manning and his committee for the enormous amount of valuable work they have done on this Hospital Care data. Dr. McCain added his endorsement also.

No further business appearing, Dr. McMillan made motion to adjourn, seconded by Dr. Ringer, and the Executive Committee was adjourned at 6:30 p. m.

Respectfully submitted,

L. B. McBrayer,
Secretary-Treasurer.

MINUTES EXECUTIVE COMMITTEE
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Sir Walter Hotel, Raleigh

January 8, 1935

The meeting of the Executive Committee was called to order by the President, Dr. P. P. McCain, at 11:30 a. m., Tuesday, January 8, 1935, Sir Walter Hotel, Raleigh.

The following were present:

Dr. P. P. McCain, President.....Sanatorium
Dr. Paul H. Ringer, President-elect.....Asheville
Dr. L. B. McBrayer, Secretary-Treasurer.....Southern Pines

COUNCILLORS

Dr. K. B. Pace.....Greenville
Dr. E. S. Boice.....Rocky Mount
Dr. Forest M. Houser.....Cherryville
Dr. R. C. Mitchell.....Mount Airy
Dr. J. R. Terry.....Lexington
Dr. G. W. Murphy.....Asheville
Dr. Benj. J. Lawrence, Chairman Committee on Legislation.....Raleigh
Dr. I. H. Manning, Chairman Committee on Group Hospital Care.
Dr. C. V. Reynolds, Acting State Health Officer.....Raleigh
Dr. John B. Wright.....Raleigh
Dr. J. T. Burrus.....High Point

Dr. McCain called for the reading of the minutes of the last meeting. Dr. Ringer made a motion that this reading be dispensed with and the minutes be approved as they were sent out to each member of the Executive Committee. Seconded by Dr. Mitchell. Carried.

Dr. McBrayer reported for the Advisory Committee to the ERA as follows:

"Your committee after many efforts beginning in the previous year, secured a conference with Mrs. O'Berry and was able to secure a very substantial increase in the fee schedule amounting to about 60% on the average.

"Each Fellow of this Society was furnished a copy of fee schedule. Copy is attached hereto.

(Signed) Dr. P. P. McCain,
Dr. Paul H. Ringer,
Dr. C. F. Strosnider,
Dr. Hubert Haywood,
Dr. John B. Wright,
Dr. L. B. McBrayer."

Report unanimously approved.

SCHEDULE OF FEES FOR FERA CASES IN NORTH CAROLINA
EFFECTIVE NOVEMBER 28, 1934

I. Office visits ..... $ 1.00

II. House visits:
(a) Within city or designated radius (5 miles)
1. Day 2.00
2. After 9 p.m. to 7 a.m. 3.00
(b) Outside city or designated radius (5 miles) fee as above with 15c per mile additional (one way) beyond designated radius.

III. Obstetrical Care: This must include at least 3 pre-natal and 3 post-natal visits, the last one must be careful gynecological examination, visits regulated as to interval with reference to best interests of patient (normal).... 20.00
(abnormal.... 25.00
In case pre-natal and post-natal visits as outlined are not rendered then the fee shall be 15.00
Additional allowance as per (b) above.

IV. Operations:
(a) Tonsils and adenoids, single case 15.00
Clinics $7.50, FERA to pay for nurse
(b) Fractures and dislocations (including materials and general care):
1. Fingers and toes 5.00
2. Forearm 10.00
3. Clavicle 10.00
4. Arm 15.00
5. Leg 20.00
6. Thigh 35.00
7. Laparotomy, Brain, Spine, etc. 50.00
(c) Major operation $25.00—$50.00
1. Surgical Procedures (Minor) .....$2.00 to 10.00
(According to case) subsequent visits charge regular visit and mileage if any.
2. Administering general anaesthetic 5.00
(d) 1. Drawing blood for laboratory examination 2.00
2. Drawing spinal fluid for laboratory examination 5.00

V. 1. All medicines of whatsoever kind and quantity are to be furnished by the FERA through its county administrator according to rules heretofore made and provided, however, all dressings are to be furnished by the attending physician without additional charge.

These fees succeed former schedule of fees for FERA cases. All other rules heretofore promulgated including Bulletin No. 7 continue in full force and effect. The foregoing schedule is agreed to by the State Relief Administrator, Mrs. Thomas O'Berry

for National and State FERA and by the State Advisory Committee of the Medical Society of the State of North Carolina, Dr. P. P. McCain, President; Dr. Paul H. Ringer, President-elect; Dr. L. B. McBrayer, Sec'y-Treasurer; Dr. Hubert B. Haywood; Dr. C. F. Strosnider and Dr. John B. Wright, for the Medical Society of the State of North Carolina.

Dr. Lawrence, Chairman of the Committee on Legislation reported that the Committee had met since this Executive Committee met in Kinston, in a conjoint meeting of the Special Legislative Committee which was appointed by the House of Delegates at its April meeting, at the Carolina Hotel, December 19, 1934. In addition to the regular Committee on Legislation there were present Dr. T. L. Carter, Dr. C. V. Reynolds, Dr. Vance P. Peery and Dr. Caviness.

The meeting was called at the request of Dr. Gaul who is a member of the special committee and who was not present.

The committee took up several matters which they considered of importance and approved two or three of them. The others they passed over without prejudice. The first of these being the matter of driver's license. The committee made a motion that we use our best efforts with the legislature to get some legislation in action to help control the casualties.

The matter of compulsory automobile insurance was discussed and since that time Dr. Lawrence has received information that the insurance underwriters will fight this particular type of bill, they will not fight but will lend their support to a bill which will provide what they call a financial responsibility law.

The second point that occupied the committee's attention was a law which would make mandatory the payment of hospital and physicians' bills in the case of paupers.

The third measure which passed the committee favorably was the request of the President that we have enacted a law which would make mandatory the vaccination against small-pox, typhoid fever and diphtheria, which was passed unanimously.

Another matter presented to the committee was at the request of the Board of Examiners, that the word "shall" be changed to "may" as regards the meeting place of the Board of Examiners. The committee did not take any action on this, however.

Another matter came up for discussion, namely, the appointment of a physician on the Industrial Commission to be approved by the Governor. The committee did not follow in this and it will not be introduced.

Then a general question of the Industrial Commission and its work as presented by Dr. Gaul under a mandate of the Mecklenburg County Medical Society to the House of Delegates was discussed. We had had a previous meeting in August at which time it had been the consensus of opinion that Gaul draft the information and send to each County Medical Society for their approval. Two or three members of the committee reported that they favored the matter as presented, several stated that

some of their county societies approved it but not a majority, when we wound up it was apparent that not a majority of the county societies had approved it or disapproved it. After a good deal of discussion the whole matter was unanimously referred to the original Legislative Committee to take whatever action was wise and proper for the best interests of the Medical Society. Upon that thought the Committee suggested that since Gaul had given this question a good deal of thought and study, and since the matter was presented by him to the House of Delegates originally, that we ask him to call a meeting in Raleigh in the near future, which we did on Wednesday, the 20th day of December. I requested that he invite to that meeting representatives of each of the ten groups named under his original draft. He could not get them together on that date but wrote me he had called a meeting for Thursday, January 10.

Dr. Lawrence stated he was instructed by the committee to seek a conference with Mr. McMullan, Chairman of the Industrial Commission, which has been done. Dr. Lawrence feels that Mr. McMullan is very kindly toward the medical profession. Mr. McMullan stated he had seen Dr. Gaul's draft and has given the matter some consideration, that Dr. Gaul had some fine ideas. Mr. McMullan did not say that he would be present at the meeting January 10 but said he had invited Dr. Gaul to have the meeting in the offices of the Industrial Commission. Dr. Lawrence said Mr. McMullan showed a very splendid spirit, showed a high regard for the profession and wanted to work with them in every particular.

On motion of Dr. Peery seconded by Dr. James it was unanimously voted that Dr. Gaul be instructed to turn over to the Secretary of the Medical Society any funds that have come into his hands as a result of his activities.

The Legislative Committee did not approve a bill respecting testimony of doctors in this State. The question of health insurance was discussed and it was decided that we should keep our ears to the ground for such bills.

Dr. Houser made a motion that the report be accepted which was unanimously carried.

Dr. Houser had a request from the Cleveland County Medical Society asking the Legislative Committee to lend their sympathy and support to two features of legislation they would like to have passed. One is to change the method of election of members of the County Board of Health so the County Medical Society could elect the two physician members and the Dental Society the dentist member. The other, that in the election of the trustees of the hospital which totals seven members all appointed by the Mayor. They would like to have four appointed by the Mayor and three by the County Medical Society.

Dr. Murphy made a motion that the Executive Committee approve this in principle and refer it to the Legislative Committee, they, if they choose, to refer it to the Secretary of the State Board of Health to handle as they see fit. Motion seconded by Dr. Houser and unanimously carried.

Dr. McMillan, Councillor of the Fifth District, asked to be excused from attendance on this meeting on account of illness in his family. Granted with regrets.

Dr. Coppridge wired the President while the meeting was in session that it would be impossible for him to attend and in his absence Dr. McBrayer read a report of the finances at the close of the year, as follows:

"At the end of the fiscal year 1934 there was a balance on hand of $31.13 with a few bills outstanding and about $1,500 to $2,000 in travel expense by the officers and committees of the Society. The Secretary estimates that he has spent $500 of his personal funds in travel expense which he gladly donates to the Society for this year.

"The Finance Committee after conference with the President decided to ask for contributions for Legislation, to pay off Dr. Northington, etc. Dr. McCain very kindly prepared the letter and sent it out over his signature. The Chairman of this Committee prepared a letter to the county societies asking for contributions from their treasury if funds were available, which went out over the signature of the Finance Committee, and the Secretary prepared a letter to the Honorary Fellows. A total of 1,200 letters were sent out December 21, 1934. Copies received by you and attached hereto.

"The returns up to the close of business January 7 are a total of $1,014.30. We think the receipts will reach $1,500, probably more, which will pay Dr. Northington and enable the Legislative Committee to function, and with the donations of all expense accounts by officers and committees for the year 1934, will enable us to break even.

"In pursuance of your instruction at your last meeting the Secretary has secured only one reporter, who will take the meeting of the Executive Committee, if any, and the meetings of the House of Delegates. The expense will be $50 and travel from Raleigh and hotel bills.

"The Finance Committee recommends that we do not print the proceedings for the North Carolina Public Health Association, which holds three sessions on Monday preceding our session, unless they are willing to and actually do pay the entire expense thereof."

Dr. Ringer made a motion that the report be approved which was seconded by Dr. Lawrence and unanimously carried.

Dr. Manning reported for the Committee on Group Hospital Care as follows:

"Your committee appointed to coöperate with the committee from the North Carolina Hospital Association in an effort to formulate a plan of group payment for hospital care in the hospitals of North Carolina submits the following report of the plan proposed and recommended by the Joint Committee:

"1. The Joint Committee recommends that all of the hospitals now members of the North Carolina Hospital Association, or approved by the Hospital Care Association be invited to participate in the plan.

"2. That a representing agency to be known as the North Carolina Hospital Savings Association be incorporated under the general laws of North Carolina, not for profit, and be authorized to carry out the program of group hospitalization under the terms and agreements hereto attached.

"3. That the Hospital Savings Association be governed by a Board of twelve directors, the members of which shall be chosen as follows: Four by the North Carolina Hospital Association, one of whom shall be the President; four by the Medical Society of the State of North Carolina, one of whom shall be the President; and four shall be chosen from the public by the eight representing the Hospital Association and the Medical Society. The method of selecting the representatives of the Public after the expiration of two years may be altered as the Board of Directors may recommend. Should any member of the Board resign, the vacancy shall be filled in a manner to maintain the above numerical representation, and such vacancy shall be filled by the organization first making the appointment.

"4. The Hospital Savings Association shall be authorized to offer on behalf of the Participating Hospitals hospital care in any of the hospitals in North Carolina on the terms and conditions set forth in the Covenants of Agency.

"5. Amendments to the covenants between the Participating Hospitals and the Hospital Savings Association may be made on motion of the Board of Directors with the approval and consent of the Participating Hospitals and the Medical Society of the State of North Carolina.

"6. The Committee recommends that an application be made to the Duke Endowment for financial assistance in the inauguration and execution of this program for a period of one year."

Dr. McCain expressed the opinion that Dr. Manning certainly deserves our sincerest appreciation for the enormous amount of work he has done.

Dr. Terry made a motion seconded by Dr. Houser that the report as prepared by Dr. Manning be accepted and the vote was unanimously carried.

The application to Duke Endowment for assistance was unanimously approved.

Dr. Murphy wanted the matter of technical x-ray in the hospital plan reconsidered. Motion was carried.

Dr. Pace made a suggestion that Dr. Manning and his committee be authorized to proceed as fast as possible with their revised set-up and as the North Carolina Radiological Society has not yet come to a conclusion of what they want, that it be thrashed out between them and the Board of Directors later on.

Dr. Ringer made a motion that we adjourn for lunch and resume the discussion of this matter directly after.

Dr. Murphy asked for an expression of opinion from the Executive Committee as to whether the x-ray service be left out of the hospital plan entirely.

Dr. McBrayer made a motion that the further consideration of this matter be indefinitely postponed. Seconded by Dr. Houser. Motion carried.

Dr. Terry made a motion that the President appoint a committee of three to present nominations for three members of the Board of Directors of the Hospital Care Association. Motion carried. Dr. McCain appointed Dr. Terry, Dr. Lawrence and Dr. Houser.

Dr. Burrus, who is a member of this Legislature, asked the Executive Committee for an opinion in regard to Old Age Insurance and Unemployment Insurance. Dr. Lawrence made a motion that the bill be opposed, seconded by Dr. Murphy.

Dr. Lawrence made a motion that in view of the remarks of Dr. Burrus, a member of the incoming Senate, that it is the desire of this committee that the medical profession ask him to watch carefully for any legislation or proposed legislation that in his judgment might be detrimental to the profession and that he be authorized to call to the attention of the President of the State Medical Society and through him to the attention of the Executive Committee any such legislation coming to his attention. Seconded by Dr. McBrayer and unanimously approved.

Dr. McBrayer made a motion that we express thanks and appreciation to Senator Burrus for calling this matter to our attention.

Dr. Terry asked that we call to Dr. Burrus' attention the action taken in the morning session in regard to election of members of County Boards of Health.

Dr. Terry reported as Chairman of the Committee of three appointed by the President to select three members of the Board of Directors of the Hospital Care Association as follows:

Dr. I. H. Manning, 3 years; Dr. L. B. McBrayer, 2 years; Dr. Jno. B. Wright, 1 year.

Dr. Ringer moved that the above be declared elected, which was unanimously carried.

Dr. Manning asked that the Joint Committee from the State Medical Society be discharged. Dr. McCain expressed the opinion that we extend our sincere appreciation to Dr. Manning and his committee for their untiring efforts which was unanimously carried, and Dr. Manning's committee was relieved from further consideration of the matter.

Dr. Pace asked that a list of those who had not paid their dues in each District be sent to the Councillors.

Dr. Reynolds advised that at the call meeting of the State Board of Health, it was decided that he should not resign as a member of the Board, as his 4-year term expires with the next meeting of the State Medical Society.

Dr. Terry stated that when doctors sent out bills and patients do not pay them they send another statement and he suggested that the President and Secretary send out a letter again asking for contributions.

Dr. Pace made the suggestion since the Legislative Committee have a lot to do and as many matters will be brought up at this session of the Legislature pertaining to medical profession, that the Executive Committee meet once a month during the session of the Legislature. Dr. McBrayer made a motion that we leave the matter in the hands of the President. Motion carried.

Dr. McCain expressed the thought that it would be better to give the Legislative Committee assurance that we are standing solidly behind them and if they need us we will be on call.

No further business appearing, Dr. Ringer made a motion that we adjourn.

Respectfully submitted,

L. B. McBrayer,
Secretary-Treasurer.

December 21, 1934.

My Dear Honorary Fellow:

I am enclosing you herewith a letter from President McCain which is going out to a selected list, hoping and expecting to secure sufficient funds to take care of the situation we find ourselves in at this moment.

The Finance Committee thought this letter should be sent to Honorary Fellows to which everybody seemed to agree.

True, we have been members of the Society for thirty years, some of us have had our membership continued according to the rules of the Society without any payment upon our part for quite several years, others for only a few years, and this is the Society's way of expressing its appreciation for our devotion and loyalty.

Please send as per the request of President McCain as much or as little as you feel inclined and if you are not in position to pay anything that will be all right too.

I feel that I am safe in saying that the officers and committees of the Society have accomplished more good for the medical profession this year than in any year in its history, for one reason because there have been more important things to come up in which the medical profession is concerned, and have spent more of their personal funds in travel expense, etc., in this work than is being asked for.

With congratulations, good wishes and personal esteem, I am,

Sincerely yours,

L. B. McBrayer,
Secretary-Treasurer.

LBMcB-E

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

OFFICE OF THE PRESIDENT

Sanatorium, N. C.

December 21, 1934.

DEAR DOCTOR:

As a result of the loss of our funds through bank failure and on account of an additional expense this year of $700 for the settlement of the judgment against Dr. Northington, our State Medical Society will close the year with a deficit. This is true although every effort has been made to economize and although the members of the various committees, some of which have had several meetings, have paid their own expenses.

On account also of the present social unrest and on account of both national and state legislation vitally affecting the practice of medicine which will likely be introduced in the 1935 sessions of our General Assembly and National Congress, the Executive Committee at its recent meeting felt that it was necessary for the Society to have capable legal counsel during the sessions of these law making bodies.

The Finance Committee, Dr. W. M. Coppridge, Chairman, Dr. Vance P. Peery and Dr. Julian Moore, states that from $2,000 to $2,500 is urgently needed for these purposes and has asked me to send out an appeal to a selected group of members, who, we feel, are so deeply interested in the welfare of the profession that they will be willing to make a contribution, for this year only, to meet this emergency.

A separate accounting of the receipts of this fund will be kept and individual credit will be given on the books of the Society.

Kindly send whatever contribution you can make to the Treasurer, Dr. L. B. McBrayer, Southern Pines, N. C.

Sincerely yours,

P. P. McCAIN,
President.

Attest:

L. B. McBRAYER, *Secretary-Treasurer.*

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

OFFICE OF FINANCE COMMITTEE

Durham, N. C.

December 21, 1934.

DEAR SECRETARY:

The State Medical Society has met with some unusual losses and expenditures in the last two years. The bank failures crippled our treasury considerably and the payment of our obligation of $700 to Dr. Northington was also quite an item. It now seems as if there will be a substantial deficit for the year without leaving any funds for the use of the Legislative

Committee in Raleigh during the months of the meeting of the Legislature. The Executive Committee is very anxious that we have some legal representation and help in an effort to keep our Society well posted in legislative matters. If the program mapped out by the Executive Committee is carried out it will cost around $1,500. It is felt that this is a crucial time because of the large amount of social legislation which is contemplated this spring.

We are calling on the various County Medical Societies for a donation from their treasury, if there be any funds available. Durham-Orange County Society has donated $100 from their treasury and we are writing you to ask if you will not bring this matter up in your Society and ask that at least a portion of any funds on hand may be donated to the State Medical Society to be used in our effort to carry on this very necessary work. Please act promptly even if it is necessary to call a special meeting for this purpose as there are certain matters in regard to Legislation that need to be arranged at this time and the Legislative Committee needs to know how much money they will have before final decision is made.

Very truly yours,

W. M. Coppridge,
Chairman.

Attest:

L. B. McBrayer, *Secretary-Treasurer.*

MINUTES EXECUTIVE COMMITTEE
of the
MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Sir Walter Hotel, Raleigh
March 9, 1935

The meeting of the Executive Committee of the Medical Society of the State of North Carolina was called to order by the President, Dr. P. P. McCain, Friday, March 9, 1935, at 2:30 p.m.

The following were present:

Dr. P. P. McCain, President.....Sanatorium
Dr. L. B. McBrayer, Secretary-Treasurer.....Southern Pines

COUNCILLORS

Dr. C. B. Williams.....Elizabeth City
Dr. K. B. Pace.....Greenville
Dr. E. S. Boice.....Rocky Mount
Dr. Roscoe McMillan.....Red Springs
Dr. W. M. Coppridge.....Durham
Dr. Forest M. Houser.....Cherryville
Dr. R. C. Mitchell.....Mount Airy
Dr. J. R. Terry.....Lexington

Dr. Benj. J. Lawrence, Chairman Committee on Legislation.....Raleigh
Dr. M. L. Stevens, Delegates to the House of Delegates A. M. A. Asheville
Dr. W. M. Johnson, Delegate to the House of Delegates A. M. A. Winston-Salem
Dr. Geo. L. Carrington, Delegate to the House of Delegates A. M. A. Burlington
Dr. I. H. Manning, Chairman, Board of Directors of the Hospital Care Association.....Chapel Hill
Dr. Carl V. Reynolds, State Health Officer.....Raleigh

Dr. McCain called on Dr. Stevens to make report as one of the Delegates to the House of Delegates of the American Medical Association at the special meeting held in Chicago, February 15 and 16. Dr. Stevens reported as follows:

"You are all more or less familiar with the changes that have taken place in medical practice in European countries as result of the compulsory sickness insurance requirements of those countries, and with the fact that these changes have not resulted in better care of the sick or in raising the standard of medical service.

"Through the influence of three philanthropic foundations, The Twentieth Century, the Milbank and the Rosenwald Funds, the Committee on the Costs of Medical Care was formed and a study was made of the medical set-up in our country with a view to recommending for the American people "the best type of medical care at a price they could afford to pay." These influences together with the economic depression made the time opportune for reformers to start a movement which, if successful, will eventually reduce our medical care for those able to pay to the same basis as that laid down for the treatment of those now on Government relief.

"Two bills have already been introduced in Congress bearing on this subject. In one of them facilities for diagnosis, medical care, hospitalization, nursing, etc., will be under the Children's Bureau of the Department of Labor instead of the U. S. Public Health Service. The other covers medical practice for all with wages or salaries up to $3,000 a year—which means about 95% of the average physician's practice. In none of the sickness insurance plans is adequate provision made for those who have no income; these, presumably we will be expected to take care of as we have always done.

"This crisis confronting the medical profession at this time was the reason for the special meeting of House of Delegates of the A. M. A. in February. The proceedings of that session you have seen in the last *Journal of A. M. A.*, and the result of their deliberations is summed up in the report of their Reference Committee.

"My suggestions as to the action that should be taken with reference to this matter are that:

"Our Secretary be authorized to inform our Senators and Representatives in Washington that our State Medical Society, as well as the American Medical Association, opposes all forms of compulsory sickness insurance.

"That it specifically opposes the provisions for sickness insurance that are a part of the bill proposed by The American Association for Social Security Inc., Abraham Epstein, Secretary.

"That it likewise opposes that part of the Wagner-Lewis Bill (S. 1130; H R 4120; H R 4142) which puts the services for the health of mothers and children, the care of crippled children and other strictly medical services under the direction of the Department of Labor instead of under the Public Health Department.

"That it earnestly requests their votes against any bill now pending or that may later be presented on compulsory sickness insurance, or tending toward socialization of medical practice.

"That a copy of Sickness Insurance Catechism be enclosed with each letter.

"Our Secretary be also authorized to send a letter to every Fellow of our State Society—

"Informing him as to the reason for the calling of a special session of the House of Delegates of the American Medical Association;

"Asking him to read in the March 2nd *Journal of the American Medical Association,* the Proceedings of the Session and especially the Report of the Special Reference Committee which summarizes the unanimous opinion of the House of Delegates;

"Requesting that each Fellow write Senator Bailey, Senator Reynolds and the representative from his district urging them to oppose all measures offered in Congress for compulsory sickness insurance (as in the Epstein Bill) or providing for any medical or health activities to be carried out under any department of government other than the U. S. Public Health Service (as in the Wagner-Lewis Bill);

"That each Fellow of our Society be furnished a copy of Sickness Insurance Catechism and urged to read it and then to get from the Bureau of Medical Economics of American Medical Association the nine other booklets on insurance and related subjects."

Dr. W. M. Johnson, also one of the delegates, made a few remarks and said the only addition he had to offer to Dr. Stevens' splendid report was the letter prepared by the Illinois State Medical Society entitled "Why We Oppose Health Insurance."

Dr. Geo. L. Carrington, the third delegate, told of the fine impression he received of the parliamentary procedure during the session.

Dr. McCain asked for any further discussion of the subject.

Dr. Houser said he had made a little survey of his home town. He went to the manufacturing places and got their average weekly payroll,

added it all up, took 4½% of the total which is the amount of tax that would have to be paid. Dr. Houser said there were four families who received more than $60 per week, two dentists and two general practitioners and figuring about what hospital expenses are paid, when he got through the tax would be about 100% above what the people in that town today are paying for dental, hospital and medical services in toto.

Dr. Mitchell said that the one thing conspicuous by its absence in all the discussions was a method of our own to solve this problem.

Dr. Lawrence made a motion that we thank the committee for their report and the completeness and thoroughness of it which was unanimously carried.

Dr. Lawrence further stated that he wished to recommend that the Secretary read the article in the March *Reader's Digest* on "Cured by Clinics," and if thought wise, the Secretary have reprints made and distribute to the profession.

Dr. McCain said it seemed to him that no one can have a right to make accusation against the medical profession in North Carolina that they have done nothing to try to solve this problem. That Dr. Manning's President's Address recommended that we approve a plan of hospital insurance which has already been created, Board of Directors elected and about ready to operate. No system of medicine that has taken thousands of years to build up can be swept aside in a few days.

Dr. Pace said he only wished to make the comment that all the bills are gotten up by non-medical men.

Dr. McCain asked the Executive Committee to approve the members of the Committee on Medical Economics, as follows:

Dr. W. M. Johnson, Chairman, Winston-Salem
Dr. R. F. Leinbach, Charlotte
Dr. C. R. Sharpe, Lexington

and two others to be selected later.

Dr. Lawrence made a motion that the appointment of these committee members be approved and authority be given the President to add two others, seconded by Dr. McBrayer and unanimously carried.

Dr. McCain spoke of the relations between the Medical Society and the Industrial Commission and that last year Dr. Manning secured their approval for the appointment of an Advisory Committee from the Medical Society to go over contested bills. He further stated that this committee has been functioning and various recommendations were made as to new legislation and other improvements which might help. After the appointment of the new chairman, Mr. McMullan, he seemed to have such a fine spirit of coöperation it was felt we could accomplish more by coöperating with this Commission than by fighting them through new legislation and it was gratifying to see the improvements that have been made. Dr. McCain stated he had only received complaint from one physician since he has been President and that was from a man who had not presented a

bill to the Commission, that he had seen the gentleman since and he stated he just didn't know what his complaint was about and that he had no complaint to make now. Dr. McCain advised that one of the things the Commission promised is that they will agree to a revision of the Fee Schedule and we would like the Executive Committee to approve the seven doctors we have suggested to act in an advisory capacity on revising the Fee Schedule. In a morning conference previous to the Executive Committee meeting Dr. McCain stated that he and Dr. McBrayer submitted the names of these doctors to the Industrial Commission to find out if these doctors would be satisfactory. Dr. McCain advised that it was the desire to have this committee meet with the Industrial Commission before the Legislature adjourns so if they do not give fair consideration to our request it still won't be too late to try to introduce some legislation leading to the accomplishment of our purpose. The names proposed for this committee are as follows:

Dr. Donnell B. Cobb, Chairman, Goldsboro
Dr. J. B. Greene, Asheville
Dr. J. S. Gaul, Charlotte
Dr. Hubert Haywood, Raleigh
Dr. Chas. I. Allen, Wadesboro
Dr. B. A. Hocutt
Dr. F. C. Smith

Dr. Houser made a motion that the committee be approved as read which was seconded by Dr. Lawrence and unanimously carried.

Dr. McCain asked Dr. Lawrence for a report as Chairman of the Committee on Legislation.

Dr. Lawrence stated he had hoped to have the satisfaction of reporting that they had enacted into law at least one measure that would be of benefit to the doctors of this State. That the committee has been active in its efforts to secure legislation but he must confess that dealing with a Legislature is most unsatisfactory, rather disconcerting and the most disheartening work he has ever done in his life. He further stated that the special committee appointed by the House of Delegates had met and agreed that they would ask for the passage of three or four particular items one of which was a driver's license carrying with it a responsibility clause. Such bill was drawn, Senate Bill No. 79, and although they had had the assurance that it would not be contested by the insurance representatives, the bill went to the Committee on Roads and the members of the Legislature were hardly in Raleigh when it was apparent that such bill was doomed to utter defeat. In spite of telegrams received previously from the insurance representatives they did fight it. Apparently the Revenue Department did not want the bill to pass, claiming that it would take off the road ten per cent of the cars now in use and reduce the revenue, although these ten per cent were unfit to be on the highway, therefore the bill was defeated. We hope, however, the bill requiring driver's license will go through.

The Diphtheria Bill went to the Committee on Health, had a hearing and they very kindly gave us a favorable report. The Christian Scientists fought the bill as did the chiropractors. It went back to the committee. They gave us another favorable report and it was again put on the Senate calendar but when it came up for action, people who were supposed to have been previously sounded out immediately began to oppose the bill by offering amendments and otherwise, and it was therefore thought wise and the Senator from Franklin was asked to kill it. The so-called Lien Bill, House Hill 148, will go back for a hearing Monday night, March 11.

Dr. Lawrence advised that the Industrial Commission had agreed to write the various industrialists in the state requesting them to take down the big placards advising that certain doctors be notified in case of accident and that they will replace them with placards advising in case of accident that they notify the office.

Dr. Terry offered the suggestion that the signs should state that the injured employees can choose their own physician.

Dr. Pace said he wondered if it wouldn't be possible to impose on Dr. Lawrence and ask him to go around through the State and appear before the County Medical Societies to give the doctors some idea as to the way things are done in the Legislature.

Dr. Lawrence said he had a feeling of futility that the rank and file of the doctors of the State are so busy that they don't know what is going on and if we don't agree to hang together, very shortly we are going to hang separately, for social insurance in upon us and he has a strong feeling we ought to have a closely knit organization.

Dr. Coppridge said it seemed to him the doctors of this State are so busy and these bills are changed so often we cannot keep up with them.

Dr. McBrayer made a motion that we accept the report of the Committee on Legislation and that we express our sincere thanks and appreciation to Dr. Lawrence for the splendid work he has been doing. Seconded by Dr. Houser. Unanimously carried.

Dr. McCain stressed the importance of contacting our representatives.

Dr. Williams said he wanted to add his approval to the attitude of Dr. Lawrence, that we don't fight for our rights, and he would like somebody to get up before the whole State Medical Society and discuss medical economics. That if in some way this Medical Society can be stimulated and some one will show them where they can better themselves economically it would create interest and appreciation. He further stated at the Medical Society meeting we hear highly scientific papers but we have got to do something about the other side of it. If one or two men in this Medical Society (Dr. Lawrence would be a good one), would discuss before the Medical Society how doctors can better themselves financially and show them that it behooves us to do something for ourselves and also tell the doctors of North Carolina how they can make a living.

Dr. Pace suggested if it had not been done, that Dr. Lawrence be designated to bring these matters before our members which was agreed to.

Dr. Manning said when he was visiting the various societies in the State he mentioned finances and he was sure some of the doctors were offended, so every time he talked about money in connection with the practice of medicine after that he always apologized.

Dr. Terry advised that in their town of Lexington they have an organization known as the Academy of Medicine which meets every month. That only two things are mentioned in this meeting, money and politics. He further stated that they defeat every man who runs for the Legislature who is not interested in the things they want done. They talk over who will be best and no one else can be elected. That is how Representative Sink was elected. They also talk over who will pay bills, who owes one and who owes another and if a family owes one doctor and does not pay and then calls in another doctor, the doctor makes some excuse and does not go; they refuse to go until they pay the bill owing the first doctor.

Dr. Williams made a motion that Dr. Lawrence be designated by this Executive Committee to lecture to the Society on Medical Economics, seconded by Dr. Pace and unanimously carried.

Dr. McCain advised that the Advisory Committee to the State Director FERA had been requested to have a conference with Mrs. O'Berry, State Administrator of the FERA, that heretofore they had had to try to get a conference with her. Dr. McCain asked Dr. McBrayer to report upon this conference.

Dr. McBrayer said that a layman who seems to have his headquarters at Winston-Salem, Padgett by name, connected with Mrs. O'Berry's office, who signs himself as "director of accident prevention" or some such title, had made out an examination blank as they wanted all the employables examined. The examination, Dr. McBrayer stated, he thought was about the equal of a life insurance examination, that it does require Wasserman test and urine test if indicated, and the doctor of course draws the blood for Wasserman. Dr. McBrayer said he thought it was a fine thing, and that he thought it ought to be done and that the examination blank is well prepared, but that after Mrs. O'Berry had requested the conference when asked what I thought of it I told her I didn't think it was "so hot." In addition to the examination blank there are quite a good many other documents that have to be filled out and it leaked out that they were going to pay 50c for these examinations. The second time when asked what objection I had, I said I thought the examination was all right and I supposed the 50c fee was to be for the clerical work and asked what they were going to pay the doctor. So the Advisory Committee, composed of the President, Secretary, Dr. Wright, Dr. Strosnider and Dr. Haywood, Dr. Haywood not being present as he was unavoidably detained though he has rendered invaluable service for the medical profession during the year, met in Mrs. O'Berry's office. We

argued the 50c fee pro and con. Told Mrs. O'Berry we would never agree to paying less than $1.00 to the doctor for anything no matter what it was and asked her why the ordinary negro digging a ditch only allowed to work thirty hours a week must have 30c per hour. Told her also as far as we were individually concerned we would rather make the examination for nothing. Then we took another tack and asked her if she would furnish a good stenographer to fill these out in every county. She said she didn't have one available in every county but she would send one in. I advised if she was going to pay $5.00 in travel expense to send a stenographer why couldn't the doctor get this amount. Mr. Padgett stated that one or two of the states had agreed to make these examinations and in Illinois the doctors are working by the hour at $2.50 per hour, making four examinations in the hour. I told Mrs. O'Berry that I agreed without any consultation that so far as we were personally concerned we would not agree to the arrangement but we would present it to the Executive Committee and let them do whatever they pleased about it. Mrs. O'Berry suggested that she thought they could bring army officers in to do the work and we told her we would very much rather she would do this. She then said she didn't think they ought to bring army officers into the State because she didn't know whether she could get them or not and she thought the doctors ought to have an opportunity to do it in each county. Finally she talked about presenting it to the doctors in each county and I said I wouldn't want a layman to present it to the doctors, unless a representative of our State Society were present also.

Dr. McBrayer further stated that this is what we may expect whenever the government employs a layman to follow around after Dr. Lawrence or Dr. Johnson to tell them when to go to see a patient, what they are to do for the patient and when and how, and what they are going to pay for it. They are trying to turn all who cannot be employed over to the counties so the amount they have been paying physicians heretofore will not amount to very much in the future. I felt humiliated and insulted and I haven't gotten over it yet; I still feel that we had today offered the medical profession of North Carolina a mean insult.

Dr. McCain stated that Mrs. O'Berry had just been to Washington and said they were anxious to get this large group of people examined and she tried to put it up to us in such a way that she thought it would increase the amount of income considerably, that there were 81,000 employables now and an average of five from each family, so there would be between four and five hundred thousand to be examined and she thought the doctors would be willing to do this for 50c as the doctors would be paid for correcting whatever defects were found. We told her we felt no doctor would be willing to make as thorough an examination as this called for for 50c, that we felt the doctors were already contributing a considerable amount toward the care of this group. That we thought the doctors of the State were willing to make the examination for very much less than they would a regular life insurance examination but felt per-

sonally they would not be willing to do it for less than $2.00 and we were not sure they would be willing to do it for that, and the committee was not willing to commit the Medical Society at all.

Dr. Houser made a motion that the Executive Committee approve the action and reaction of the Advisory Committee to the proposition Mrs. O'Berry had to offer which was seconded by Dr. Pace and unanimously carried.

Dr. Terry made a motion that this Executive Committee go on record as refusing the 50c and that it be left to the Advisory Committee to work out something feasible or something better if it can be done and that Mrs. O'Berry be advised that it is the consensus of opinion that this is similar to the regular insurance examination and worth $5.00. Seconded by Dr. Houser and unanimously approved.

Dr. McCain called on Dr. Manning to make a report as Chairman of the Board of Directors of the Hospital Care Association.

Dr. Manning stated that they have been marking time for the reason that the Trustees of the Duke Endowment to whom we made application for funds to help finance this, in view of the situation in Washington on social insurance, have taken no action. He further advised he had been informed they wanted to wait and see what would be done in Washington and how far the social security program will go and he felt it was just as wise they did wait as if the employers are to be taxed for this security insurance they will not be interested in any other program.

Eleven of the twelve directors have been elected, eight of whom have been appointed from the Society and the Hospital Association and three from the public whom we consider very good men, Hudson of Hudson-Belk stores; Herman Cone of Greensboro, Robert Lassiter of Charlotte, but the fourth man has not been decided on and there didn't seem to be any particular hurry about it. The signatures of the incorporators are attached to the application for charter and they expect to receive the charter within the next few days. The directors will be ready to do business whenever they receive any money to do business on. Thanks.

Dr. Lawrence stated our senators ought to be requested to oppose both the Wagner and the Epstein Bills, which was approved.

Dr. Johnson asked as Chairman of the Committee on Public Relations that he be authorized to write our Senators and Representatives, which was done.

At the request of Dr. Coppridge, Chairman of the Finance Committee, Dr. McBrayer made report as follows:

Amount received to date Special Fund			$1,776.54
Disbursements:			
Legislative Committee		$ 550.00	
Northington judgment		700.00	1,250.00
Balance Special Fund			526.54
Cash on hand, 3/9/35	$2,240.26		
Special Fund balance	526.45		
Balance General Fund	$1,713.72		

Dr. Coppridge made a motion that we recommend to the House of Delegates that beginning 1936 the dues of the Society be increased.

Dr. Mitchell made a motion that we ask for the dues to be $10.00 per year, seconded by Dr. Terry and unanimously carried.

Dr. Reynolds, State Health Officer, brought to the attention of the Executive Committee the Uniform Narcotic Law which was drawn by the American Medical Association, which is being passed by a number of states. On motion Dr. Lawrence, Chairman of the Committee on Legislation, and Dr. Reynolds, State Health Officer, were instructed to collaborate on this and do whatever they thought wise in the premises. Seconded by Dr. Terry and unanimously carried.

Dr. Lawrence made the suggestion that the President confer with the Chairman of the Industrial Commission relative to the appointment of the three members of the Medical Advisory Board to be appointed under the so-called Occupational Disease Act.

Dr. McBrayer told the Executive Committee as they go home he just wanted them to think that this Executive Committee is one of the most important things in the organization of the Medical Society of our State. In South Carolina they had to call a meeting of the House of Delegates to approve the report of their delegates to the Special Session of the A. M. A. Dr. McBrayer further stated that he felt that this afternoon we have shown that we are grasping the important things that are pressing for solution not only in our own state but in the nation and that we have in each instance as a group of intelligent men and with unanimity reached proper conclusions for the good of the medical profession in North Carolina and perhaps outside of North Carolina and I feel we should be congratulated that we can get and give serious thought to the matters that need to be considered, and had it not been for this Executive Committee over the period of the last few years I don't know how we would have been able to function with the problems that have come before us.

Dr. McCain expressed his personal appreciation for the loyalty of the members of the Executive Committee even without their expenses being paid and the support they had given him all the way through.

Adjourned.

Respectfully submitted,

L. B. McBrayer,
Secretary-Treasurer.

. . . A motion was offered to approve the minutes of the Executive Committee without having them read, which motion was duly seconded and, on being put to vote, was carried.

. . . The President then read his message to the House of Delegates, as follows:

MESSAGE TO THE HOUSE OF DELEGATES

P. P. McCain, M.D., F.A.C.P., *President*

The presidency of the Medical Society of the State of North Carolina is an honor of singular significance, and one which I appreciate more deeply than any which it has ever been my good fortune to receive. I am most grateful for your confidence, and I regret that my limitations have kept me from rendering the quality of service which it has been my earnest desire to render.

Through my visits to all the various district and to many of the county society meetings during the past two years I have been greatly encouraged over the interest being manifested in organized medicine and in the high quality of the programs presented.

Since the beginning of improved financial conditions there has been an encouraging increase in membership in our State Society. At the close of the year there were 1,612 members in good standing. There are approximately 2,260 white physicians in the State, about 200 of whom have retired from active practice. This means, therefore, that there are about 450 active physicians who are eligible for membership, but who are not members of organized medicine in North Carolina. We must not rest content until every qualified physician in the State is not only a member, but is also working for the good of organized medicine.

The events in recent years and particularly during the last twelve months constitute both a challenge and a threat to the medical profession and, if we are to retain control of the practice of medicine, it is essential that we form the strongest possible organization.

If any physician is not fully aware of the danger of lay and political domination of both the medical profession and the practice of medicine, he need only read over the bill prepared and spread broadcast by the American Association for Social Security. Through its compulsory and voluntary sickness insurance provisions combined it would include medical, dental, nursing and hospital care for 95 per cent of the population. A substantial proportion of the costs would be borne by the State and Federal governments. Complete administrative control would be provided by a politically appointed board of five members, the chairman and at least two other members of which would be laymen. There would be a system of district and local boards to manage details. All administrators would either be laymen or physicians employed by and subject to the dictation of political and lay controlled boards. The physicians who would care for the sick would either be placed on a salary or on such a competitive basis that it would be impossible for them to give adequate medical care.

Plans are already laid for this bill to be introduced into Congress and into the legislatures of a number of the states. Through weekly coast to coast radio broadcasts by some of our country's most convincing speakers,

by some of the most high powered writers in the popular magazines, by press releases to 1,000 periodicals and through every other form of propaganda the advocates of this bill and other forms of socialized medical legislation are endeavoring to popularize their schemes. They have already brought such pressure to bear on the public and such political pressure to bear on the medical profession in California that the House of Delegates of the State Medical Society of California has approved sickness insurance. The sponsors of state or socialized medicine are concentrating their efforts to secure the passage of the bill in California, feeling that when it is passed in one state it will be relatively easy to get the other states to follow suit.

When the workmen's compensation law was passed in one state after another the doctors took no steps to see that their interests were safeguarded, and the difficulties which the profession has had in the operation of workmen's compensation laws are mere trifles in comparison to what they can expect from state or socialized medicine.

We must not only have every eligible physician a member of our State Society, but each member needs to keep himself informed as to developments and use his influence with our state and national lawmakers to see that they protect the interests of the sick and prevent the regimentation of the medical profession. Physicians come into intimate contact with many people and have peculiarly good opportunities to influence favorably the opinions of a large proportion of the population in political matters which influence the practice of medicine from the standpoint of patient, public and doctor. Politicians are good listeners. "Their business is to discover dominant currents of public thought and translate them into law and practice." If the medical profession is not represented in the public thinking, whose fault is it but our own?

If our State Society is to retain its independence and the control of the practice of medicine, our members must not only be politically alert, but we must also have a larger revenue than our $5.00 annual dues will yield.

To meet the emergency which existed this year the Finance Committee had to make a special request for voluntary contributions. The generous response was most encouraging. Individual contributions ranged from two to fifty dollars, and county society contributions up to two hundred twenty-five dollars, the total amount received being $2,061. I wish to express both personally and officially my deep appreciation to those loyal members from all over the State who so generously came to our rescue. This appeal was made specifically to enable us to meet our indebtedness to Dr. Northington, to take care of our deficit, and to raise necessary funds for our Legislative Committee, including the expense of legal counsel. It is not fair to call for voluntary contribution however except to meet emergencies. Even if we could depend each year on voluntary contributions for the additional funds needed, it would be undemocratic and contrary to the principles of our organization where each member is supposed to meet on exactly the same footing.

During these stringent times there are so many situations, both in State and national affairs, which demand our attention and which necessitate decisions vitally affecting the whole profession that it is necessary to have frequent meetings of the Executive Committee and also of other important committees. It is not for the best interests of the Society for these decisions to be made by two or three officers, however well informed they may be and however much they have the interests of the whole profession at heart. Is it not sacrifice enough for busy physicians to leave their practice to attend these committee meetings without having to bear their own traveling expenses?

Last year under the wise guidance of Dr. Manning and the Finance Committee this House of Delegates adopted a budget, but on account of lack of funds it has been impossible to finance several items in the budget. We have had four meetings of the Executive Committee, to only two of which were the traveling expenses of the members paid. There were insufficient funds to pay the traveling expenses of our delegates to the American Medical Association. There have been numerous meetings of the Committee on Group Hospital Care and several meetings of the Legislative Committee, of the Finance Committee, of the Advisory Committee to the Emergency Relief Administration and of other important committees, yet the members have in all instances had to bear their own traveling expenses. The travel and office expense allowance for the Secretary needs to be materially increased that he may be able through frequent communications to the individual members and through visits to the county and district societies keep the whole profession informed as to new developments. Also during the present unsettled condition of affairs pertaining to the practice of medicine it is exceedingly important for us to have a reserve fund to meet any possible emergency that may arise.

After careful consideration and upon the advice of the Finance Committee the Executive Committee passed a resolution recommending that to become effective in 1936 the annual dues be raised to $10.00. I heartily recommend that this resolution be adopted. By strengthening our financial position our organization will be much better situated to command public respect, to secure the consideration we deserve at the hands of governmental authorities and to protect ourselves against the ever increasing unjust malpractice suits. The dues of most other state medical societies which function most actively are $10.00 or more.

The more cordial relationships existing between the profession and the Industrial Commission are most gratifying. The members of the Medical Society Advisory Committee to the Industrial Commission, Dr. Donnell Cobb, Dr. B. A. Hocutt and Dr. F. C. Smith, have done splendid work and we are greatly indebted to them for their services. The new chairman of the Industrial Commission, Mr. Harry McMullan, has evidenced a most commendable spirit of fairness and coöperation.

We were also gratified that the Advisory Medical Society Committee to the Emergency Relief Administration was able last fall to secure a more

satisfactory schedule of fees for the medical care of relief cases. While in the main the State Emergency Relief Administration seems to have a sympathetic attitude toward the problems of the profession in matters pertaining to medical relief, we were greatly surprised recently at their asking the profession to make careful physical examinations on relief cases at the ridiculously low price of 50c each. The Advisory Committee, of course, recognized the advisability of having such examinations and classifications of relief cases made, but refused to recommend that they be made for any such fee. The Committee presented the matter to the Executive Committee, which the same afternoon passed resolutions refusing to approve the 50c fee and authorized the Secretary to notify all component county medical societies to this effect and urge that they take similar action. The action of the Executive Committee has been heartily endorsed by all the county societies heard from to date.

We feel that it would be very much to the advantage of the profession and that it would make for greater efficiency and fairness in the furnishing of medical care for a physician to have charge of medical relief work. I, therefore, recommend that this House of Delegates pass a resolution urging the proper relief authorities to appoint a physician in charge of medical relief and that the appointee be one who has the approval of the Advisory Committee of the Medical Society to the Emergency Relief Administrator or of the Executive Committee. I also recommend the passage of a resolution urging the payment of physicians for the medical and surgical care of relief cases in hospitals.

I wish to express my deep appreciation to the members of the Executive Committee and to the members of the various other committees for their splendid work throughout the year and for the sacrifices which they have made in attending committee meetings at their own expense. To Dr. I. H. Manning, Chairman of the Group Hospital Care Committee, to Dr. B. J. Lawrence, Chairman of the Legislative Committee, to Dr. W. M. Coppridge, Chairman of the Finance Committee and to Dr. Wingate M. Johnson, Chairman of the Public Relations Committee, we are especially indebted for their tireless and most effective efforts in prosecuting the matters coming under their care.

Owing to the family relationship which I bear to our Secretary, Dr. L. B. McBrayer, it would not be fitting for me to give my estimate of his value to this Society nor to speak of his complete devotion to its welfare. I do wish, however, to record my personal indebtedness to him for his constant advice and counsel without which it would have been impossible for me to carry on my duties as president with any degree of satisfaction. (Prolonged applause)

Secretary McBrayer: Mr. President, I move you, sir, that a committee of three be appointed to take into consideration the recommendations of the President and other matters in the President's message to the House of Delegates and in the President's address before the general session tomorrow morning.

. . . This motion received a second. It was put to vote by the Secretary and was carried.

SECRETARY McBRAYER: The committee will be appointed later.

PRESIDENT McCAIN: We will have the report of the Secretary-Treasurer at this time.

SECRETARY McBRAYER: Before I begin that, and as part of it, I want to report to you that at my request the Aetna Casualty & Surety Company gave me this information today in regard to physicians' and surgeons' liability insurance. They stated, first, that they were not issuing physicians' liability insurance, at the price quoted here, to any physician who is not a member of the State Medical Society. That is a thing that I have insisted upon a great deal in the matter of insurance, and this is the first time I have ever gotten an absolute agreement that that would be the case. They also stated that they have changed their policy about compromising suits, or threatened suits, and that they have adopted a policy (subject, of course, to the approval of the doctor who is being sued) of fighting it to the finish and that they have been able to save quite a good deal of money to the Insurance Company by handling it in that way. They stated, as I understood, that they could further reduce their charges if the doctors would stand by them and stand by each other. Ordinarily, after a man gets in a suit most of the doctors will be glad to help in any way they can. A study was made at one time (not in this State), and it was found that eighty per cent of all the malpractice suits were caused by the unguarded words of the physician who followed in the treatment of a patient or by the physician who treated the case in some other disease later.

Their basic charges now are as follows: $5,000-$15,000 limits, $18 a year. (That is the same price that they have been charging for a number of years, but it is 25 per cent lower than the lowest price we had before that.) $10,000-$25,000, annual premium, $24; $25,000-$50,000, $34.70.

They are working on the charge for therapeutic x-ray, which has always been exceedingly high, and they hope to have a satisfactory lower price for that.

I thought you might be glad to have that information.

. . . The Secretary-Treasurer then read his report, which was received with applause.

ANNUAL REPORT OF THE SECRETARY-TREASURER

L. B. McBRAYER, M.D., F.A.C.P.

The Finance Committee will report on the financial transactions of the Society and hence that will not be mentioned further in this report. I must say that it has rendered and is rendering this Society a most conspicuous and most valuable service.

The Legislative Committee will make its own report, but I would not be true to myself nor this Society did I not place on record the fact that

the Chairman of the Committee, Dr. Benj. J. Lawrence, is the most capable, efficient and the most productive of results of any Chairman I have ever seen in action. It would be impossible to estimate the enormous amount of time he has given to this work during the 1935 session of the General Assembly, nor would it be possible to estimate the value to the profession and the people of our State of the work accomplished. I am free to state that more constructive legislation has been put through this Legislature than any session ever held, save only when the State Board of Medical Examiners and State Board of Health were created. I trust he will go into these things in some detail. In leaving the subject of legislation I must tell you two things: (1) The State Hospital Association appreciated the passage of the Lien Bill H. B. No. 148, which covered hospitals, dentists and nurses as well as doctors' bills, and they put their appreciation into concrete, visible form, by sending a check for $150.00 to reimburse us to that extent for money spent in securing the passage of this bill. (2) I heard a senator say that if we had begun our legislative work 25 years ago in the manner we have done in 1935, the Legislature would now give us anything we asked for without a question.

WORK THROUGH COMMITTEES

You should know something of the committee work of our Society. Dr. Manning's Committee on Hospital Care, which became a Joint Committee of the North Carolina Hospital Association and the Medical Society of the State of North Carolina, Dr. Manning will make his report, the work having been completed. This committee met a dozen or more times with twelve members on the committee. The President and Secretary attended all these meetings as they did all other committee meetings. That would mean the equal of 168 members of this Society spending one day in the work of this committee, however, it was not so broadly distributed, and in reality fourteen members of this Society each spent twelve days of their time serving on this committee during the past year—and in addition paid their own expenses. Dr. Manning has given an enormous amount of time in studying best methods of procedure and preparing the results of such study for submission to the other members of the committee. This Society and the Hospital Association are to be congratulated! The Hospital Care Association is the first non-profit organization of the kind launched on a state-wide basis, in this country.

The Society has 29 committees and delegates composed of 129 members. The Executive Committee: This committee composed of 16 members has held four meetings, and generally every member is present. Usually each session begins about 10 a. m. and continues in session the entire day. Some of the state medical societies, because no provision was made for an executive committee, had to call a special session of their house of delegates in each of the last two years. You will note that the four meetings were equivalent to one man giving 64 days of his time to the profession during the last year.

The national legislation and rules and regulations made by bureaus and other things nationally inimical to the best interest of the profession and the people, make it necessary for the Chairman of your Legislative Committee and your President and Secretary to keep in close touch with such things and it is very necessary at times for them to go to Washington to look after such matters. Very recently this was the case, but fortunately for us, Dr. C. V. Reynolds, a Past President of this Society and State Health Officer, was going up on some personal matters and he very kindly attended to these for us, in a very capable, satisfactory and efficient manner, without expense to our Society. We are and should be duly grateful. As a result of work done in Washington, it is believed that the medical activities in our State for the United States Government will be much more satisfactory from all standpoints. These plans are not yet completed, and there are many and much other things at Washington demanding, yes, requiring the presence, study, thought and intelligent and forceful action of this Society, by and through its committees.

When anything requiring action is referred to a county society, the following should be routine: (1) have a meeting and give due consideration to the matter, (2) pass on it, (3) report your action to the Secretary, (4) do it now. Each item is of equal importance. In leaving this particular subject, let me say that if the profession as represented by the organized medical societies, stand together in everything as they have done and are doing, we will always win.

Your Secretary has endeavored to carry out all the instructions of the Society whether through this House of Delegates, the Executive Committee, the President, and/or other committees, and has spared neither time nor personal expense in so doing.

Despite the familial relations I must say that it has been a real pleasure to work for and with President McCain during the past year. The night has not been too dark nor the distance too long for him to go when he felt he could render a service to our profession, and particularly to organized medicine. The influence of his year's work will live to bless our profession and our people until time shall be no more. The Board of Directors of the Sanatorium very kindly gave him a leave of absence at such times as he might feel that he should be away from the Sanatorium in the work of this Society. I am sure that this Society appreciates this magnanimity on the part of his Directors, and will wish to take official action in regard thereto.

"United we stand, divided we fall." The bundle of sticks when united closely together, shoulder to shoulder as it were, cannot be broken even by a giant, but separated the strength of a child may break them. This was never truer than it is today, and it has always been true since the foundation of the world. This particularly applies to our profession today. The handling of medical relief for ERA by our Society, perhaps is not just what might be desired, yet we have been able to stand together on this

subject, and it has been to the everlasting credit of our profession. While this is true, yet we were magnanimous in our attitude and ready to co-operate with any and all to the fullest extent in the care of the indigent sick, but it should be understood once and forever, that the medical profession does not place itself on a plane with the plumber, plasterer or other artisan, either in type or quality of our work, and the cities, counties, states and nation and all the people should give due consideration to this attitude, for we believe it to be correct. There is no reason why we should do our work for a little or nothing while the government makes us pay higher and higher for everybody we employ, and for everything we buy.

Nowithstanding the comparatively small fees paid by the ERA, the total for March 1935 is as follows: medical services $35,145.82; midwife $900.75; medicine and drugs $20,702.55; other $3,810.50; nursing $1,103.36; total $61,662.98. This would indicate that the physicians of this State received in round numbers about one-half million dollars in the year for services to the indigent that they had heretofore been rendering without compensation. If through and by this example we should be able to impress upon all the units of Government and upon all the people the idea and fundamental principle that the physicians of our state are under no more obligation to treat the indigent without remuneration than are the coal man, or the grocery, merchant or drug store, etc., to give their goods without charge to the same group. That sickness in the indigent is a community problem and a community responsibility, and as such must be financed by the community and the physician may be counted on to do more than his share. While a few members of our Society have been given much of their time, energy and thought to a study of these problems and an endeavor to protect the interests of our profession and our people, yet we are face to face with the necessity of thinking ahead of the various units of our government and leading the way into such changes in methods of delivering to all the people the science of medicine as it is known to us today, or as it may be known to us tomorrow, as may be necessary, lest we be driven through the influence of some psychotic uplifter or group of such, into ways in the practice of medicine that are dark and devious and detrimental to the delivery of the best medical service to all our people with a fair remuneration to the physician. It is not enough to vote NO, but we must counteract their propaganda and, yes, their influence, by working out ahead of them and presenting our plans which should be synonymous with better results to all concerned. The fight is still on and next year, or maybe this, the social uplifters will renew the attack, if indeed it is not kept up constantly, as it has been since the beginning of the so-called Study of the Costs of Medical Care, which was some seven years ago.

I heard that an M.D. said he would not join his County and State Society. He would let the others do the work and put up their money and devote their time to the benefit of our profession, and he would get the benefit of whatever was accomplished along with the rest of them. Praise

be! There are few of this kind in our profession. The members in every county should see to it that every eligible physician should become a member of organized medicine, of their county society.

I am pleased to report that we have 1,502 members in good standing today for 1935—212 of these are Honorary Fellows, and yet there are four or five hundred more who should come in. If the members of each county would set as their goal a 100 per cent membership, and each and every member make it a religious duty to speak to each doctor in their county who is not a member and ask him to put himself in good standing and if you didn't see him often, send him a note making such request, and telling him that he needs us and we need him, few there are who would continue aloof. It is worth doing.

We are greatly delighted at the number of county societies who have a 100 per cent membership at this time. The honorary roll is as follows:

Avery, Bertie, Brunswick, Cleveland, Columbus, Cumberland, Davidson, Forsyth, Gates, Granville, Halifax, Hertford, Hoke, Jackson, Jones, Lee, McDowell, Onslow, Pamlico, Polk, Rutherford, Sampson, Scotland, Stanly, Warren, Wayne—Total 27.

Let every county society "go thou and do likewise."

Respectfully submitted,

L. B. McBrayer,
Secretary-Treasurer.

President McCain: We will now have a recess of three minutes for the delegates from each district to get together and elect their member of the Nominating Committee. As soon as you elect your member of that committee, please come forward and give his name to the Secretary.

. . . Recess for election of members of the Nominating Committee.

* * * *

The President: The House will come to order again, please, and the Secretary will read the names of the members of the Nominating Committee.

Secretary McBrayer: The members of the Nominating Committee are as follows: First District, C. B. Williams; Second District, Ben F. Royal; Third District, W. Houston Moore; Fourth District. George W. Mitchell; Fifth District, J. F. Highsmith, Sr.; Sixth District, P. G. Fox; Seventh District, W. S. Rankin; Eighth District, W. F. Cole; Ninth District, J. W. Vernon; Tenth District, J. F. Abel.

I would suggest that, on adjournment, these ten men get together in the end of the hall back there and decide on a time and place where they will hold their first meeting; then they will be ready to go. If you want to, you can elect your chairman; if you don't, you can wait until you have your first meeting somewhere else.

Dr. C. B. Williams: Mr. Secretary, I would suggest that you name a man as chairman.

The Secretary: They always elect their own chairman, Dr. Williams.

President McCain: We have reports to come from a number of committees, and we will proceed. The first is the report of the Finance Committee—Dr. W. M. Coppridge, Chairman.

REPORT OF THE FINANCE COMMITTEE OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FOR THE YEAR 1934

The report of the auditor shows that on January, 1934, there was in the bank a balance of	$ 58.87
Receipts during the year:	
Dues	7,217.00
Liquidating Dividends—Page Trust Co	589.29
Collection of dishonored checks	105.00
Showing a total amount of	$7,970.16
The disbursements amounted to	7,939.03
Leaving a balance on hand December 31, 1934, of	31.13

The committee, together with the Secretary-Treasurer and the President, has had to modify considerably the expenditures called for in the budget. A copy of the auditor's report showing the various expenditures in comparison with the budget appropriations is on file with the Secretary-Treasurer and will be published in the Transactions. The amount appropriated for Executive Committee meetings and other committees has had to be drastically reduced. There has been no funds available for the President's office and travel expense. $200.00 was paid out of the treasury to Dr. Northington.

The total cost of the Transactions for the year was $3,167.19, leaving only $4,802.97 for the running expenses of the Society.

In December 1934 the Finance Committee recommended to the President and Secretary the solicitation of voluntary contributions from a large number of the members and I am pleased to say that the response was more generous than we could have hoped it would be. By April 25, 1935, we had received into this fund $2,048.04. The remaining $700 due Dr. Northington was immediately paid and $750 placed at the disposal of the Legislative Committee. $345.00 of this amount was used to pay off the deficit incurred in the previous year. The remaining $253.04 will probably be consumed by the Legislative Committee this year. At the date of the meeting last year we had approximately 1,000 paid members (not including honorary members). To date we have 1,290 paid members, which shows an increase of nearly 300 in the membership of the Society during the year.

The Finance Committee in coöperation with the Executive Committee has attempted to study in a broad way the various activities of the Society and it has been agreed that there are not sufficient funds available to carry on the work as it should be done. It is not felt that the Society should resort to voluntary subscriptions again. We feel that the various committees, such as the Executive Committee, the Legislative Committee and other special committees such as Dr. Manning's Committee on Group Hospitalization and others, should be paid at least a part of the expense incurred in transacting business for the Society. The Executive Committee has unanimously favored the employment of legal counsel so that we may have in the meetings of the Executive Committee the advice of a regularly employed attorney. This appointment could be made with the added purpose in mind of his help during the sessions of the Legislature. The preparation of various medical bills and assistance in seeing them through the legislative bodies would be a great help to the Society. There are many members who feel that we should look forward to the employment of a full-time secretary sometime in the near future.

In studying our expenditures for the past year, the only item found that we thought might be reduced was that of the Transactions. As stated above the amount expended on Transactions last year was $3,167.19. The Secretary-Treasurer believes that by omitting the Transactions of the Public Health Association and discussions of papers, that approximately $500 may be saved without detracting from the value of the published Transactions.

Realizing the need of additional funds in order to meet the growing demand for concerted action by the Society for its protection against various social measures, the Finance Committee recommended to the Executive Committee the raising of the annual dues from $5.00 to $10.00. This was approved by the Executive Committee and will be presented at this meeting. In a study of the annual dues of various state societies, we found that they vary from $3.00 in Alabama to $25.00 in Texas. Arizona, Colorado, Delaware, Idaho, Iowa, Kansas, Massachusetts, Nevada, New Jersey, New York, Rhode Island, Texas, Utah, West Virginia, Wisconsin and Wyoming all have state medical society dues of at least $10.00 or more. We feel that if our Society wishes to progress and do much more than simply "have a society," we must raise our dues to $10.00. There are several national societies to which many of us belong, whose dues are $25.00 or more a year. I do not wish to question the benefit that they might be to us, but it is the feeling of the Finance and Executive Committees that a strong State Society can be made of inestimable value to all of us. If we are to have it we must be willing to pay for it. The accomplishments of the Legislative Committee this year, I think, shows us clearly what we may be able to do with a little more organization. It is unfair for any member or group of members to be called upon to take the amount of time from their work that has been necessary for Dr. Lawrence and his committee this year.

The Finance Committee, therefore, recommends to this body that the annual dues be increased from $5.00 per year to $10.00 per year and that a new budget be worked out with the idea of securing for the Society all benefit possible from the money so derived.

Respectfully submitted,

W. M. Coppridge, *Chairman,*
Julian A. Moore,
Vance P. Peery,
Finance Committee.

Report unanimously adopted.

REPORT OF THE EXAMINATION OF THE FINANCIAL TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

December 31, 1934

February 26, 1935.

Dr. P. P. McCain, President
The Medical Society of the State of North Carolina
Southern Pines, North Carolina

Dear Sir:

Pursuant to engagement I have examined the books kept by your Secretary-Treasurer, Dr. L. B. McBrayer, Southern Pines, North Carolina, for the year ended December 31, 1934, and have prepared and submit herewith, the following described statements:

Exhibit "A"—

Receipts and Disbursements—Year Ended December 31, 1934.

Exhibit "B"—

Expenditures and Comparison with Budget Appropriations for the Year Ended December 31, 1934.

It will be noted that while the appropriations made amounted to $8,800.00, actual expenditures amounted to $7,834.03, or $965.97 less than the appropriations made.

Certain expenditures, such as President's jewel, etc., were not provided for in the budget as adopted. These expenditures amounted to $94.88.

The cash receipts, as shown by the records, were found to have been properly deposited in the bank and all disbursements made by checks.

Yours truly,

J. Beverly Redford,
Certified Public Accountant.

Receipts and Disbursements

Year Ended December 31, 1934

Balance on Deposit January 1, 1934		$ 58.87
Receipts:		
Dues	$7,217.00	
Page Trust Company—20% Liquidating dividend	589.29	
Collection of dishonored checks	105.00	
Total Receipts		7,911.29
Total		$7,970.16
Disbursements:		
Operating expenditures	$7,834.03	
Dishonored check	105.00	
Total Disbursements		7,939.03
Balance December 31, 1934		$ 31.13
Reconcilment with Citizens Bank & Trust Company:		
Balance as shown by bank statement		$ 33.37
Outstanding check No. 313—Dr. K. B. Pace		2.24
Balance as above		$ 31.13

Expenditures and Comparison with Budget Appropriations

For the Year Ended December 31, 1934

	Expenditure	*Appropriation*	*Expenditures in Excess of Budget*	*Budget in Excess of Expenditured*
Chairman of Sections:				
Stationery	$ 10.00	$ 10.00	$	$
Councillors:				
Stationery	10.00	10.00		
Travel		250.00		250.00
Executive Committee:				
Travel	183.21	500.00		316.79
Other Committees:				
Travel	22.17	300.00		277.83
Legislative Committee		500.00		500.00
President's Office:				
Stationery	10.00	10.00		
Postage, telephone and telegraph		15.00		15.00
Travel		200.00		200.00
Secretary's Office:				
Secretary's salary	1,000.00	1,000.00		
Clerical asssitance	1,055.04	1,000.00	55.04	
Stationery and supplies	360.36	100.00	260.36	
Rent, light and water	322.86	300.00	22.86	
Travel	293.57	250.00	43.57	
Freight and express	6.96	10.00		3.04
Postage, telephone and telegraph	324.71	150.00	174.71	
Miscellaneous	197.28	150.00	47.28	

	Expenditure	*Appropriation*	*Expenditures in Excess of Budget*	*Budget in Excess of Expenditured*
STATE MEETING:				
Miscellaneous	264.70		264.70	
TRANSACTIONS:				
Printing, binding and mailing	2,529.56	2,000.00	529.56	
Reporting	569.13	800.00		230.87
Preparation of copy	67.50	150.00		82.50
Miscellaneous	1.00	50.00		49.00
NORTHINGTON:				
Judgment	200.00	700.00		500.00
DEFICIT	311.10	345.00		33.90
MISCELLANEOUS ITEMS NOT PROVIDED FOR	94.88		94.88	
Totals	$7,834.03	$8,800.00	$1,492.96	$2,458.93

PRESIDENT McCAIN: You have heard the report of Dr. Coppridge. Is there a motion to adopt?

. . . A motion was offered, and duly seconded, to adopt the report as read.

PRESIDENT McCAIN: Is there any discussion of the adoption of the report? If not, all in favor of adopting the report will say "Aye"; those opposed "No." The ayes have it, and the report is adopted.

Is there a motion to adopt the recommendation of the committee for an increase in dues?

. . . Dr. John B. Wright read the following resolution and moved its adoption:

RESOLVED, (1), that, Chapter XII, Section 1, By-Laws be amended by striking out the word FIVE, being the fourth word in the first line of Section 1, and inserting in lieu thereof the word TEN.

(2) that Chapter XII, Section 1, By-Laws, be further amended by striking out the phrase following the word "Society" in line 2 and beginning with the word "provided" and ending with the words "authority to do," being the third, fourth and fifth words in the fifth line, Chaper XII, Section 1.

So that Chapter XII, Section 1, By-Laws, as amended will read: An assessment of ten dollars per capita on the membership of the component societies is hereby made the annual dues of this Society, which amount shall be collected by the Secretary of each county society from each of its members on or before the first day of February in each year. The secretary of each county society shall forward a statement of its assessment, together with its roster of all officers and members, list of delegates, and list of non-affiliated physicians of the county, to the Secretary-Treasurer before the first day of March of each year.

. . . The motion to adopt the resolution was seconded by Dr. Moore. In reply to a question by Dr. Taylor, the President stated that the motion

would have to lie over for 24 hours, or until the next meeting of the House of Delegates. The matter was discussed by Drs. C. B. Williams, Mitchell, Taylor, John B. Wright, Julian A. Moore, W. F. Cole, and Benj. J. Lawrence. Dr. Cole moved that the discussion be closed, which motion was seconded and carried.

President McCain: We will now have the report of the Committee on Legislation, Dr. B. J. Lawrence, Chairman.

Dr. B. J. Lawrence: Mr. President and members of the House of Delegates: I suppose at the outset I ought to try in some manner, if I were capable, to thank our Secretary for the more than glowing tribute he paid me and my committee in his report. I wish the committee and I halfway deserved what he said. If I can ever think that I do deserve half of it, then I shall be mighty glad.

I do want to say this, that without the able assistance of our beloved and distinguished President we could have accomplished little. I believe that I speak the truth when I say that he is the most universally loved man in our entire Society. (Applause) He is loved and honored by the doctors throughout this State and by the lay folks throughout this State. I believe it would be fair to say that in the Legislature and in committee rooms his word is perhaps taken for more and reaches further than that of any other doctor whom it has been my privilege to see in action there, unless it is his splendid father-in-law, our efficient Secretary (applause), who knows more doctors and who does more for the doctors of North Carolina than any other man in this State now or at any time since it has been my privilege to come and go to and from these meetings. With due humility, and in fairness, I want to say that, in spite of what he said about the Committee on Legislation, we would have fallen far short of anything that we have thus far been able to accomplish if it had not been for his wise counsel, his untiring efforts, his loyalty, and his devotion to the cause of organized medicine in North Carolina. And with that as a sort of half tribute, I should like to read a brief report covering some of the detail work of the Legislative Committee.

Mr. President, Members of the House of Delegates of North Carolina State Medical Society:

I want to thank this House of Delegates and through you the entire membership of the State Society for the fine coöperation and genuine support which has been accorded us during these last months. Our duties have been trying, often strenuous and tedious—but always they have been pleasant. The knowledge that we were trying to serve our great profession has taken a bit of the sting out of what of discord of necessity occasionally arose. Under and by the authority vested in us by an act of this House of Delegates when last assembled, we nominated and the President and Executive Committee confirmed a sub-committee of ten, viz, Dr. C. V. Reynolds, chairman, Dr. Thomas L. Carter, Dr. Vance P. Peery, Dr. H. B. Ivey, Dr. Z. M. Caviness, Dr. J. S. Gaul, Dr. H. B. Hiatt, Dr. Ross S.

McElwee, Dr. Houston W. Moore, Dr. W. D. James, with the specific duty of studying the Compensation Act and probable means of improving its workability. This committee was called together at the Sir Walter Hotel in Raleigh during the last of the summer of 1934. Present at that meeting were the following: Our President, Dr. P. P. McCain, our Secretary, Dr. L. B. McBrayer, Dr. J. Frank Highsmith, Sr., Dr. W. Houston Moore, Dr. W. D. James, Dr. Vance P. Peery, Dr. Z. M. Caviness, Dr. J. S. Gaul, Dr. H. B. Ivey and the chairman of the regular Legislative Committee, Dr. B. J. Lawrence. Dr. Carl V. Reynolds, Dr. H. B. Hiatt, Dr. R. S. McElwee and Dr. T. W. M. Long were not present.

The Committee considered at length the Compensation Act and its various phases relating to the medical profession. Dr. Gaul suggested that he could enlist the support of several large groups, including the insurance carriers, in an effort materially to change the Compensation Act. After considerable discussion, lasting from two to three hours, it was agreed that each of the ten members of the sub-committee present Dr. Gaul's scheme to their component societies. The committee would then meet at a later date for further and more detailed study.

BEN J. LAWRENCE,
Chairman for the Committee.

Carolina Hotel, Raleigh, N. C., December 19, 1934.

The committee was called together by the Chairman. The following men were present: Our President, Dr. McCain, the Secretary, Dr. McBrayer, Dr. J. Frank Highsmith, Sr., Dr. T. W. M. Long, Dr. Carl V. Reynolds, Dr. Thomas L. Carter, Dr. Vance P. Peery, Dr. W. D. James, Dr. Z. M. Caviness, Dr. B. J. Lawrence. We spent the entire afternoon going over the situation as carefully as we could. Dr. Gaul was not present.

The conjoint committee considered at length a general legislative program.

No. 1. A driver's license with a financial responsibility clause. Unanimously adopted.

No. 2. An act to make mandatory the payment of hospital and physicians' bills for services rendered to pauper accident cases when as and if such persons receive sums of money. Unanimously adopted.

No. 3. The committee refused to approve a measure to forbid the qualifying in the courts of this State doctors from other states not licensed in North Carolina.

No. 4. The committee approved the suggestion that we attempt to pass a compulsory diphtheria vaccination bill.

No. 5. The committee thought unwise the request from the Board of Medical Examiners that the word "shall" be changed to "may" in Article No. 6609 in the Practice Act.

The conjoint committee then took up the question presented to the sub-committee by Dr. Gaul at its previous meeting.

Dr. Carter reported that his district was not well enough organized and that they had not been able to get any concrete action on the matter. Dr. Houston Moore from Wilmington was not present and made no report. Dr. Peery reported that his district favored the revision of the Workmen's Compensation Act along the general outline discussed by the committee. Dr. Caviness reported that he had favorable reports from four of the ten counties in his district. Dr. James thought his district favored the program with general modification. He stated, "I, personally, think the program is too ambitious and that we will have difficulty in obtaining so much legislation at one time." Dr. Reynolds reported favorable action from the majority of his counties. Dr. McElwee was not present and therefore we had no report from his district. Dr. H. B. Ivey was not present but reported that perhaps four of his counties favored the program, but that they would not contribute any financial backing. Dr. Gaul was not present, but stated that his district had approved the plan fully and requested that the next step in his judgment was that all the interested parties, the insurance carriers, the doctors, nurses and hospital, etc., be requested to meet and consider a group program. Dr. Hiatt was not present and made no report. (Dr. Hiatt was reported ill.)

It will be seen at a glance that nothing like a majority of the county societies are on record either for or against the matter. After much discussion of the whole matter as outlined by Dr. Gaul, there was a motion by Dr. Peery, seconded by Dr. Carter, and passed unanimously as follows: "Whereupon the matter under discussion relating to the Workmen's Compensation Act in North Carolina has many complicated and intricate technical phases and whereas under the Dr. Gaul plan there are numerous separate groups with interest in the program, more or less individual and whereas the entire matter as outlined is perhaps too ambitious or perhaps not in the proper form to present to the Legislature: Be it resolved, after careful consideration, that the entire matter be referred at this point to the regular Legislative Committee for its further study and consideration." Carried unanimously.

At this point Dr. Reynolds asked our instructions as to what to do with the money he had collected at the suggestion of Dr. Gaul. He stated that he had already sent the money to Dr. Gaul. No member of the committee seemed to know where or how Dr. Gaul got the impression that he was to collect money since the committee nor any member of the committee had any authority to collect funds or disburse funds for the State Medical Society. After some discussion there was a motion by Dr. Peery and seconded by Drs. Carter and James that the funds so collected and now in the possession of Dr. Gaul be turned over to Dr. McBrayer, the Secretary-Treasurer of the State Medical Society. Motion carried unanimously. The question of old-age or health insurance came up and a round table discussion on the matter followed. It was the opinion of the committee that the medical profession would have to deal with the question on insurance in the near future. That our committee and the profession

use its best efforts in keeping the relationship between the patient and the doctor an individual matter.

Following the above meeting it was decided by the three members of the regular committee that since Dr. Gaul had given such extensive study to the Compensation Act, and since he had stated that he could enlist the coöperation of all the groups interested in the question of compensation, that we ask him to call those groups together for a conference in Raleigh between the dates of December 25th and January 31st. Dr. Gaul called such a meeting at the Sir Walter Hotel on or about January 8, 1935. Doctors McCain and McBrayer were present, together with the members of the Industrial Commission, certain representatives of the insurance carriers and its chairman and Committee on Legislation. So far as I have any knowledge none of the other interested groups which had been mentioned in the original presentation were present. The meeting resolved itself into a round table discussion between Dr. Gaul (who was asked to present the matter) and the insurance carriers and the Commission. It was apparent, I think, to all of us that the insurance carriers were not only unwilling to coöperate with the plan as outlined by Dr. Gaul, but many of them were openly hostile to it. Upon such a showing the Legislative Committee thought it unwise to press the question further.

As chairman of this committee and because of my intimate and personal knowledge of the situation, I wish to thank our able and distinguished President and our Secretary for the very fine work which they have done and are constantly doing. In particular I wish to thank them for the fine way in which they have smoothed the relationship existing between the Industrial Commission and our profession as a whole. All of us are aware of the fact that the Industrial Commission has a new chairman. In my judgment he is an able, efficient and splendid gentleman. He is always courteous and seems anxious to know our wishes and to comply with them as far as lies in his power. To illustrate, at the request of doctors McCain and McBrayer and your committee he readily agreed that the large placards placed in the industrial plants of the State literally advertising certain physicians to the disadvantage of others should come down. I happen to know that in casting about for suitable men to compose the Occupational Disease Board he has already consulted several prominent men of our profession and has openly asked for their advice and counsel. We are certainly to be congratulated upon his appointment. For this we are in a large measure indebted to my distinguished colleague, Dr. H. B. Haywood of Raleigh. It is my impression that we will have much less discord and more coöperation as the months pass.

The North Carolina General Assembly has been in session since January 9th. Your committee has been privileged to present several bills. The compulsory diphtheria bill, which was the handiwork of our President, passed the committee twice with a favorable report. It met strenuous opposition and was tabled on account of objectional amendments. The bill providing for a driver's license with a financial responsibility clause died

in committee. HB 148 providing for a lien in favor of physicians and hospitals finally passed both houses and was ratified. That, I think, was a fine victory for the profession. HB 769 which would have permitted osteopaths to practice medicine without a license was opposed by your committee, President McCain and Secretary McBrayer, and it died in committee. HB 1133, known as the Hospital Tax Exemption Bill, passed both houses. Your committee and this House of Delegates are indebted to the Honorable John T. Burrus of Guilford, Dr. Mitchell, one of our own members who assisted us in every way possible. We are also indebted to the Honorable Rivers Johnson, Carl Bailey, Senator Teague, Edward Griffin and John Watkins for their fine support and coöperation. We are also indebted to, and I want to take this opportunity to thank, the Honorable Billy Sullivan of Buncombe, Mr. Morphew of Graham, Mr. Lumpkin of Franklin, Speaker Johnson, Mr. McEcheran, Mr. Fenner, Sam Blount, and others for their outstanding efforts and willingness to coöperate with us. I also want to thank Doctors Carr and Peterson, two of our members, for their fine spirit of coöperation. Dr. Farrell and Dr. Douglas of the dental profession were exceedingly kind and helpful, and I am grateful to them.

We are all aware of the fact that Congress is in session at the Nation's Capital. Your committee with the help of the President and Secretary has kept its ear to the ground for legislation concerning the profession. You have heard or will hear a special report from the American Medical Association which met in Chicago in February, 1934, in which the National House of Delegates condemned vigorously the trend toward socialized or State medicine. This course was unanimously endorsed by the Executive Committee as requested by the President, the Secretary and Dr. Stevens, chairman of the State delegation to the Chicago meeting.

Your committee feels very keenly that it is imperative for us as a profession to oppose vigorously the widespread propaganda toward statewide medicine filling the press and being broadcast constantly. In conclusion I wish to thank you for your confidence and your support during the past two or three months. And while I must confess that it is hard and at times discouraging to work with the Legislature, I count it a privilege to serve this body. I feel that in order to deal successfully with the legislative problem it is necessary for one to recognize certain fundamentals. To begin with, one should not only know but it is imperative that he know intimately the membership of both branches. It is not sufficient to have a bare speaking acquaintance with the members. It is absolutely imperative that one be able to speak their language. That language may be difficult but it is necessary to know it and know it well. Second, I would emphasize the importance to be placed upon the person attempting the contact. I believe I speak the truth when I say that comparatively few people are so constituted that they can do such work successfully. It requires, among other things, an iron constitution, a gluttonous appetite for work, an indomitable will, together with the knowledge of how and what to do, plus the most flexible and affable disposition which one can muster. In short,

one must be able to speak with Socrates, to sing with Plato and Virgil and to reason with Demosthenes and, if necessary, to do battle with Alexander or Napoleon. And then, perhaps, suddenly lie down with the lion and the lamb. One must keep everlastingly at it. Finally, I would say that we need 20 to 30 of our ablest physicians in the House and 15 in the Senate. And then we must have a united and solid front. The most disconcerting thing that has ever happened to me as chairman of this committee has come on two occasions when I had every reason to believe that I was representing a united and solid front, when suddently members of our own group turned on me to destroy the very things they had asked me to do. And as your chairman on legislation it seems to me that it takes a solid front to accomplish class legislation before a hostile group.

Dr. John T. Burrus, of High Point, who is a member of the Senate, sent his love to this House of Delegates. He regretted that he could not be here tonight. He has fought valiantly for our and his profession.

In closing, I want to pay a tribute to my friend, Dr. Highsmith, who has served on this committee tirelessly and faithfully with me, and to my friend, Dr. Long, of Roanoke Rapids.

Dr. James W. Davis, Statesville: I offer the following motion: Resolved, that the Medical Society of the State of North Carolina extend a vote of thanks to Dr. Lawrence and the Legislative Committee for what they have done and also to the members of the Legislature and all the others, both in and out of the Legislature, who have helped out this year in getting legislation so badly needed by the profession and by the hospitals.

. . . This motion received several seconds and, on being put to vote by the President, was adopted.

Dr. R. C. Mitchell, Mount Airy: I should like to move that the members of the Legislature, as designated by Dr. Lawrence, who have coöperated in securing the passage of legislation desired by the medical profession be individually thanked by the House of Delegates by a letter to be written by the proper official of this Society.

. . . This motion was discussed by Dr. John B. Wright, Raleigh, who seconded it, with the proviso that it be amended to include all members of the Legislature who had voted for the passage of bills desired by the profession.

Dr. Lawrence: I merely mentioned some of the men who have been outstanding in their willingness to help us. I think now of others; I just could not think of them all at one time. I shall be glad to furnish a complete list to the Secretary. I feel that a letter from the Secretary and the President, expressing our appreciation for their coöperation—not specifying what they did, perhaps—would do us no harm.

. . . The matter was further discussed by Dr. C. B. Williams, Elizabeth City, and by Dr. Lawrence. Dr. W. F. Cole, Greensboro, offered the following substitute motion: That Dr. Lawrence and his committee designate

the members of the Legislature who have aided the medical profession in legislative matters and that a personal letter be sent to each from that committee, expressing the thanks of the House of Delegates of the Medical Society of the State of North Carolina.

. . . Dr. McBrayer offered the following amendment to Dr. Cole's motion: That that particular part of the report be referred by Dr. Lawrence to the President, to go over the matter and decide just what should be done. This amendment was accepted by Dr. Cole, and carried.

President McCain: We shall now have the report of the Committee on Group Payment for Hospital Care, by Dr. I. H. Manning, Chairman. (Applause)

REPORT OF THE COMMITTEE ON GROUP PAYMENT FOR HOSPITAL CARE

Pursuant to a suggestion contained in the President's Address at the last meeting of the Medical Society and on motion of Dr. J. F. Highsmith, approved in principle by the House of Delegates, the North Carolina Hospital Association appointed a committee to study and, if possible, develop a plan for group payment of hospital care for the State. Upon request of this committee, the Executive Committee of the Medical Society at a meeting on June 1, 1934, appointed a committee from the Medical Society to coöperate in developing such a plan.

The joint committee was composed as follows: Representing the Hospital Association, Mr. J. L. Melvin, Park View Hospital, Rocky Mount, chairman; Mr. Graham L. Davis of the Duke Endowment; Dr. Geo. L. Carrington, Rainey Hospital, Burlington; Dr. J. W. Davis, Davis Hospital, Statesville; Dr. Bahnson Weathers, Roanoke Rapids Hospital, Rosemary; Dr. J. F. Highsmith, Highsmith Hospital, Fayetteville; and Mr. Newton Fisher, James Walker Memorial Hospital, Wilmington; representing the Medical Society, Dr. Wingate Johnson, Winston-Salem; Dr. Vance P. Peery, Kinston; Dr. W. H. Smith, Goldsboro; Dr. D. T. Tayloe, Jr., (later succeeded by Dr. DeWitt Kluttz, Washington); Dr. I. H. Manning, Chapel Hill. At the first meeting of the committee held in Chapel Hill, Dr. I. H. Manning was made chairman and Mr. J. L. Melvin secretary.

After several meetings held in Chapel Hill and Greensboro, a tentative plan was presented by a sub-committee composed of Drs. Manning, Peery, Davis, Messrs. Melvin and G. L. Davis, which, after many amendments, was adopted. The report of the committee was then submitted to the trustees of the Hospital Association and the Executive Committee of the Medical Society, and with some further amendments, was tentatively approved. In a program of this character and potentialities, perfection and therefore finality, cannot be anticipated. It should possess a large measure of elasticity and until there is an accumulated experience it should be open to improvement. We realize that a group payment plan for an entire

state is an experiment which has not been tried before and we would like to set up a model in this State for other states essentially like it, especially in the South.

The joint committee used as a basis for its discussions the Periodic Payment Plan of Cleveland, Ohio, which was the only group payment plan as a coöperative enterprise of any considerable number of hospitals published in full detail and available at the time. This plan had been approved by the Academy of Medicine of Cleveland and the committee felt that it would make no mistake in using it as a guide in the development of our own program. The essentials of the plan are as follows:

1. It is a coöperative enterprise of the hospitals of North Carolina, represented by the Hospital Association and approved by the Medical Society of the State of North Carolina. This means that it will be conducted for the benefit of the hospitals and the people in complete accord with the ethical standards of the medical profession.

2. The Hospital Saving Association, Incorporated, set up as a non-profit, non-stock corporation, is the agency provided to carry out the program under a board of trustees to be named as follows: four are to be elected by the Medical Society, one of whom shall be its president; four are to be elected by the Hospital Association, one of whom shall be its president; and these eight shall elect four from the public at large. In the event of resignation or death of any member of the board, his vacancy shall be filled from the organization or group he represented, so that a numerical parity will be maintained. The trustees representing the Hospital Association and the Medical Society are to serve one, two and three years, and the trustees at large two years or until such time as may seem desirable.

In pursuance of this plan the Executive Committee of the Medical Society elected Drs. P. P. McCain, L. B. McBrayer, J. B. Wright and I. H. Manning. The Hospital Association elected Mr. Newton Fisher who was later succeeded by Dr. B. C. Willis, President of the Hospital Association, J. L. Melvin, Dr. J. F. Highsmith, and Dr. J. F. Brownsberger. The eight trustees so elected named Mr. Robert Lassiter of Charlotte, Mr. Herman Cone of Greensboro, Mr. K. G. Hudson of Raleigh, and Mr. T. Holt Haywood of Winston-Salem. At an informal meeting of the Board of Trustees the following officers were elected: Dr. I. H. Manning, President; Mr. Robert Lassiter, Vice-President; Mr. J. L. Melvin, Acting Secretary-Treasurer. The three officers with Dr. J. F. Highsmith and K. G. Hudson were elected to form the Executive Committee.

While the plan provides for an assessment of $2.00 in cash and $5.00 in credit per bed of the member hospitals for the purpose of providing the funds for inaugurating the program, it became apparent that such an assessment would add to the embarrassment of the hospitals and for a time at least would defeat the purpose we have in mind. The joint committee, therefore, with the approval of the Executive Committee of the Medical Society and the Trustees of the Hospital Association, made appli-

cation to the Trustees of the Duke Endowment for financial assistance during the period of organization and development. The Trustees of the Endowment at its meeting in Charlotte on April 9th made an appropriation of $25,000.00 under the following resolutions:

May 4, 1935.

Mr. Alex H. Sands, Jr., Secretary,
Duke Endowment,
30 Rockefeller Plaza,
New York, N. Y.
Dear Mr. Sands:-

At a meeting of the directors of the Hospital Saving Association of North Carolina, Incorporated, held in Raleigh, April 30, Dr. Manning presented and read a letter from Dr. W. S. Rankin dated April 26, 1935, in which he quoted as follows from the minutes of the meeting of the trustees of the Duke Endowment held April 9 in Charlotte:

"After further discussion, on motion of Judge Perkins, seconded by Mr. Bell, the sum of not exceeding $25,000.00 was appropriated, out of funds available for assisting hospitals, for the purpose of assisting the Hospital Saving Association of North Carolina, Incorporated, in the development of a group payment plan for hospital care in North Carolina, and the proper officers were authorized and directed to make payment from this appropriation for the purposes stated as and when requested by Dr. W. S. Rankin, Director of the Hospital Section."

On motion of Dr. B. C. Willis, seconded by Dr. J. F. Highsmith, it was resolved that the President and Secretary be instructed to advise the trustees of the Duke Endowment that the contribution is accepted and greatly appreciated.

Yours very truly,
HOSPITAL SAVING ASSOCIATION OF NORTH CAROLINA, INC.
J. L. MELVIN,
Secretary-Treasurer.

JLM/p

The Trustees of the Duke Endowment, I am convinced, were moved by the desire to coöperate with the Hospital Association and the Medical Society in the improvement of the hospital facilities in North Carolina and to relieve the hospitals of the threatening charity load they are now carrying and are likely to continue carrying for some years. Ultimately we believe this will release a large part of the funds of the Duke Endowment for the purpose of increasing the number of hospital beds and the equipment of our hospitals, both of which are badly needed. Moreover, the plan, if it is successful, will demonstrate that the hazard of sickness requiring hospitalization may be safeguarded by regular though small payments by every member of a group without privation to any one, even among the lowest income groups, and incidentally to establish the fact that

social security may be attained by organized effort rather than by governmental dole or public charity, which is more in accord with the traditional American spirit. It is with pleasure and appreciation that I am privileged to announce this general grant, and I assume that this Society will pass appropriate resolutions to the Trustees of the Duke Endowment through Dr. W. S. Rankin and his associate, Mr. Graham L. Davis, who, as a member of our joint committee, has been most enthusiastic and untiring in his efforts.

At a second informal meeting of the Board of Trustees of the Hospital Saving Association held in Raleigh on April 30th, following the announcement of this grant, on motion of....., the following resolution was adopted:

"That the Trustees of the Hospital Saving Association accept with very great appreciation the appropriation of $25,000.00 for the purpose of promoting the group payment plan for hospital care as tentatively approved."

It was further moved that the Duke Endowment be requested to give Mr. Graham Davis a leave of absence for a period of not exceeding two months in order that he may assist Dr. Manning in making a first-hand study of the English Voluntary Contributory Plan which is the most successfully conducted voluntary group payment plan in the world. I am informed that the Trustees will grant this request.

The Hospital Saving Association is now in process of organization, but will probably not be in operation before September 1. Let us hope by that time the industrial unrest will have quieted.

I want to say that, of course, we recognize that this program is not a panacea for all the ills of which, perhaps, we have a right to complain and of which the public, perhaps, has a right to complain. In my judgment (and of course my judgment amounts to nothing when it comes to national affairs) the program under the Social Security Act is taking too much of a bound. It is undertaking too much all at one time for which we have had no experience in this country at all. But in this group we are confining ourselves strictly to one phase of medical care—i.e., hospitalization.

I thank you very much.

Dr. I. H. Manning,
Chairman.

(Applause)

. . . It was moved that the report of Dr. Manning be accepted. Motion seconded. Discussion by Dr. J. LaBruce Ward, Asheville. The motion was then put to vote and was adopted.

Dr. George L. Carrington, Burlington: I move that this House express to Dr. Manning its appreciation for the fine work he has done and is doing in this matter and that it express to the Duke Endowment our appreciation for its generous gift to the Hospital Savings Association.

. . . This motion received several seconds and, being put to vote, was adopted.

. . . The report of the Committee on Medical Economics was next called for by the President. Dr. Wingate M. Johnson, Chairman, read the report, which, on motion duly seconded, was adopted.

REPORT OF COMMITTEE ON MEDICAL ECONOMICS

Mr. President, and Members of the House of Delegates:

Our committee was so recently appointed that we have had no formal meeting; but this report has been submitted by the chairman to the other members of the committee, and their suggestions embodied in it.

We recommend:

1. The acceptance by the State Society of the principles laid down by the House of Delegates of the A. M. A. in session at Chicago February 16, and ratified by the State Executive Committee in Raleigh March 8. Inasmuch as this report expressly asks the Bureau of Medical Economics of the A. M. A. "to develop for presentation at the meeting of the A. M. A. in June model skeleton plans adapted to the needs of populations of various types," we feel that our Society should wait until these plans have been submitted. Then, perhaps, this committee or its successor may be called together to study the plans submitted and present the most suitable one or ones to the Executive Committee for action.

2. The endorsement and hearty support of the North Carolina Hospital Saving Association; with the caution that the plan can be wrecked unless the physicians of the State coöperate in discouraging abuse of its membership privileges.

3. While we feel that there is little danger of exploiting North Carolina doctors by professional organizers, we urge unceasing vigilance on the part of our members lest they be ensnared in some high-sounding scheme for dispensing medical services at wholesale rates, to the profit of the lay organizers. This warning may apply to some government agencies; for example, Mrs. O'Berry's recent ridiculous offer to pay fifty cents for an elaborate examination of relief "workers."

4. Finally, we recommend that every doctor in the State familiarize himself with the arguments for and against state medicine or compulsory health insurance, and lose no opportunity to acquaint the public, especially his patients, with the evils inherent in the system. One of the most concise and unanswerable presentations against it is the pamphlet, "Why We Oppose Health Insurance," published by the Illinois State Medical Society. Copies may be obtained from the secretary, Dr. Harold M. Camp, Monmouth, Illinois.

W. M. Johnson, *Chairman,*
R. F. Leinbach,
C. R. Sharpe,
Committee.

President McCain: We will now have the report of the Delegates to the American Medical Association. This has been prepared by Dr. M. L. Stevens and will be read by Dr. George L. Carrington.

Dr. Carrington: Mr. President and gentlemen: Dr. Stevens has been a delegate to the American Medical Association for so long and has served so efficiently that we regard him as our chairman, and whatever he tells us to do we do. He told me to read the report which he had prepared, and which has been approved by Dr. Wingate Johnson, and therefore I am presenting it.

. . . Dr. Carrington then read the report of the Delegates to the American Medical Association, which, on motion of Dr. J. Q. Myers, duly seconded, was adopted.

REPORT OF DELEGATES TO A. M. A.

The greater part of the work of the House of Delegates at the 1934 Session of the A. M. A. was in strenuous effort to save the medical profession and those whom it serves from disaster from the oncoming tide of change in methods of medical practice.

The Speaker of the House of Delegates in opening the Session called attention to the danger of our professional interest being subsidized, and our existing relationship to society being lost as result of radical changes in governmental administration and the increasing demands of society, and admonished the House to mobilize all our resources to obstruct such an untoward condition and to defeat those who seek to invade our field for the control of our professional services.

The President, Dr. Dean Lewis, spoke of the changing times and the fact that the medical profession had been accused of not keeping up with the social and economic advances.

The President-Elect, Dr. Walter Bierring, spoke of the great problem concerned with the changing order of medical practice, and the well-meaning non-medical advisers who have brought out a variety of artificial remedial plans supposed to solve every phase of our problem.

The report of the Board of Trustees clearly indicated that these problems were giving them grave concern. Their Bureau of Medical Economics reported a marked increase in the number of proposals and schemes offered by individuals and groups to modify the existing order of medical practice. In the files of this Bureau 570 contract practice plans are on record and 40 different plans had been offered within the year. Their Bureau of Legal Medicine and Legislation had made exhaustive study of recent Federal legislation and its bearing on medical practice, especially the National Industrial Recovery Act, the Federal Emergency Relief Administration, the Federal Civil Works Administration and the Hospitalization of Veterans. But the most portentous part of the report of the Board of Trustess was that part bearing on compulsory health insurance. In 1916 a study of social insurance in all its forms was begun by the Board of

Trustees. In 1920 the House of Delegates went on record as opposing all forms of compulsory health insurance and again in 1921 adopted a resolution approving all activities and policies of the state directed to the prevention of disease, but opposing the state treatment of disease except for the delinquent and the defective. Since that time the same point of view has been repeatedly sustained. A number of European countries have established state systems of medical care and in this country an intensive campaign led by philanthropists, social workers, economists, and various foundations has been carried on to cause the American medical profession and the American people to accept a similar type of medical practice. Manifestations of unrest in relationship to the economic situation among some of the component bodies of the A. M. A. and communications that had been received by the Board of Trustees urging a change which would demand a departure from the policies previously set down by the House of Delegates caused the Trustees to present this problem anew to the House of Delegates for extended discussion, and for a definition of policies for their guidance. The final action on this matter was the adoption of ten principles that may be followed by constituent bodies as bases for the conduct of any social experiments that may be contemplated by them. These principles (see Report of House of Delegates of A. M. A.) remove the interest of the politicians, the commercial promoters and all those seeking to achieve other objectives than better medical care for those unable to provide such care for themselves under present conditions and at the same time they protect the character of the service to be given and guard against abuses which are bound to arise when these principles are neglected.

Early in the present year the influence of the propaganda of the philanthropic foundations, social workers and economists on the trend of American thought was evidenced in proposed Federal legislation, which if passed by Congress in the form proposed, would seriously change existing methods of medical practice as related to those able to pay for it, and leave unprovided for those who are unable to pay. To consider the social and economic policies of the A. M. A. as related to this proposed legislation a special session of the House of Delegates was held in February.

One hundred and sixty-one of the 172 delegates composing the House were present. The gravity of the situation was reflected in the seriousness of officers and delegates, and in the earnestness of the work of the assembly. The first day of the meeting was given over to obtaining the opinions of and information from any and all who cared to discuss any phase of the problem for which the meeting was called. The gist of every opinion and plan was recorded and turned over to a reference committee as material from which they were to crystallize the consensus of opinion of the House of Delegates. After a night of hard work they presented their report which after free discussion was unanimously adopted. This report most of you have read in the March 2nd issue of the *Journal of A. M. A.*

Your Delegates feel that the changing order of medical practice vitally concerns every practicing physician in our country—concerns each of us; that too many of us are not sufficiently informed as to the probable consequences which would result from some of the changes that have been proposed; that this lack of information makes it impossible for us to show clearly to our patrons, the voters, how state controlled medicine will affect them and why it will neither lower the cost of medical service nor provide better care for the sick; and that the several informative booklets which have been prepared by the Bureau of Medical Economics of the A. M. A. on Sickness Insurance, State Medicine and the Cost of Medical Care should be carefully read by all who are not already familiar with their contents.

Another matter of concern to this Society was the reducing of our quota of delegates from three to two. This, of course, was because of decline in the number of paid-up members in our Society as of April 1st. It is unfortunate and the remedy is apparent. Inasmuch as dues are paid in through the county units those here should call this matter to the attention of the county societies they represent.

Respectfully submitted,

Wingate M. Johnson,
Geo. L. Carrington,
M. L. Stevens.

President McCain: The work of the Committee on Public Relations and of the Committee on Medical Economics is so closely related that Dr. Wingate M. Johnson was asked to serve as chairman of both committees. I ask Dr. Johnson to give the report of the Public Relations Committee at this time.

. . . Dr. Johnson read the report of the Committee on Public Relations. On motion, duly seconded, the report was adopted.

REPORT OF PUBLIC RELATIONS COMMITTEE

Mr. President, and Members of the House of Delegates:

There is not a great deal for our committee to report this year. The controversy which was carried on much of last year with the Industrial Commission, came to a head soon after the state meeting and culminated in the resignation of the chairman of that body. Thanks largely to the generalship of Dr. Manning, ably seconded by Drs. McCain and McBrayer, an advisory committee from the State Society was appointed, and has been working in complete harmony with the reorganized Commission.

Last year the suggestion was offered that the next chairman of the Public Relations Committee might well ask for a place on the program of the State Press Association in order to tell something of its aims and of its desire to work in harmony with the press. At that time the present chairman did not expect to succeed himself, else the suggestion would not

have been made. Dr. McCain wrote the President of the Press Association asking that such an arrangement be made, but in the absence of an invitation the Society was not represented. Our relations with the press, however, have been so cordial that we can not but think the ignoring of Dr. McCain's letter was oversight. Nevertheless we still feel that such a consummation is to be wished, and would be of mutual advantage.

Some of you may have noted that there has been little in the press from this committee. As stated last year, we have felt that it was best not to appear too often in print, but to wait until we had a real need for publicity before asking for newspaper space. Enough has been done behind the scenes, however, to justify the existence of the committee.

We wish to emphasize again the importance of local public relations committees for the individual county societies. These committees can do much to bring about harmonious relations between the papers and the profession, and to present the medical viewpoint to the public. Just now, with the paid propagandists of certain interests endeavoring to convert the nation to socialized medicine, it is more important than ever that the doctors have authorized spokesmen. It is important, too, that individual doctors familiarize themselves with the arguments against socialized medicine and through the tremendous influence they have counteract the well-organized campaign to force it upon the public. Report approved.

. . . The President then called for the report of the Committee on Cancer, which was read by Dr. C. C. Carpenter, chairman, and on motion, duly seconded, was adopted.

REPORT OF THE COMMITTEE ON CANCER

Mr. President, Members of the House of Delegates:

Your Committee on Cancer has spent a very active year since our last report to you. This Committee, in one respect, is different from many other committees in that most of the work has been done by members other than the Chairman. At a meeting held in the office of Dr. L. B. McBrayer at Southern Pines on September 26, 1934, with Dr. McBrayer and President McCain, it was decided that your Chairman and Dr. H. B. Ivey should carry on the work with the county medical societies and that Dr. W. D. James would work with the Federation of Women's Clubs. A special program on cancer has been held in every section of the State in connection with the county or district medical societies. The program has been conducted largely by members of the local profession, although a member of this committee has been present at most of the meetings. These meetings have been held and planned independent of any request from the committee or members of the committee.

I wish to call to your special attention the tremendous amount of work done by Dr. James in connection with the program on cancer sponsored by the North Carolina Federation of Women's Clubs. You, no doubt, remember that it was agreed at a meeting of the House of Delegates last year that since this organization had planned a program on cancer, in order

to carry it on in a highly scientific manner, it should be supervised by a member of this committee. In shouldering this burden Dr. James has in no way spared himself. He has attended 28 different meetings, traveling a total distance of 4,564 miles, and the total attendance at the meetings amounted to 6,750 people. This commendable work has been done in a highly scientific and ethical manner. Since no money has been available for expenses, one can readily see that this amounted to a considerable personal expense, as well as loss of time from his own practice. Your Chairman has received dozens of letters from different clubs throughout the State expressing their appreciation of this service.

Your Committee has followed your recommendation and consulted with the Committee on Public Relations relative to radio broadcasts and newspaper articles on cancer. We did not feel this method of transmitting information to the laity relative to cancer desirable, therefore, it has not been done.

A few cancer clinics have been established during the last year. We mention this only as a matter of information since your committee has in no way taken part in their organization and operation. We believe, however, that this means an increased interest on the part of the profession and will work for more accurate diagnosis and treatment. Also, the number of hospitals having routine pathological examination of tissues removed at operation has increased, which should aid in the early diagnosis of cancer.

Your committee has endeavored at all times to work through and carry out the wishes of the medical profession and we feel that it is very important that the medical profession continue to take an active interest in this problem in order that it may be done in a scientific and ethical manner.

Respectfully submitted,

C. C. Carpenter, *Chairman,*
H. B. Ivey,
W. D. James.

Report of committee approved.

. . . The President called for the report of the Committee on Maternity and Infancy, Dr. H. H. Johnson, Louisburg, chairman.

Secretary McBrayer: Mr. President, that committee and the Committee on Immunization Against Diphtheria were appointed at the request of the late Dr. James M. Parrott, State Health Officer. Dr. Parrott was too ill to be present at the last meeting of the Society, and I think neither of those committees has been called to meet. They were to meet in Dr. Parrott's office to confer with him on several matters.

President McCain: We will have the report of the Advisory Committee to the State Industrial Committee. Dr. Donnell B. Cobb is chairman.

. . . Dr. Cobb presented his report as Chairman of the Advisory Committee to the North Carolina Industrial Commission, which report, on motion duly seconded, was adopted.

REPORT OF COMMITTEE APPOINTED TO ADVISE WITH THE INDUSTRIAL COMMISSION

Mr. President and Members of the House of Delegates:

In June, 1934, a committee was appointed to confer with the Industrial Commission on contested bills and to render such other service as it may be able to do in the administration of the Industrial Act. This committee was without authority to change the existing fee schedule and functioned entirely in an advisory capacity.

It is our pleasure to report the activities of this committee and to give our impressions of the administration of the Industrial Act as it concerns remuneration for medical services.

It was originally thought that the members of this committee would receive $25.00 per day for their services and expenses. Mr. Harry McMullan, chairman of the Industrial Commission, held a conference with Governor Ehringhaus and the assistant director of the budget, Mr. Frank L. Dunlap, at which it was learned that there was no provision in the law by which the Director of the Budget could authorize such a payment. The Attorney General ruled that members of this committee must be paid on the same basis as members of the Board of Health, namely, $3.50 per day and mileage at 5c per mile to and from meetings.

It was primarily agreed that there should be a meeting of this committee with the Commission every quarter. The resignation of the former chairman of the Industrial Commission, Major Allen, and the appointment of his successor, Mr. Harry McMullan, delayed our first meeting. We did not confer with the Commission until October 29, 1934. In the opinion of the Commission the scarcity of contested bills did not warrant another meeting until February 25, 1935. So instead of meeting quarterly your committee has conferred with the Commission only twice.

At these meetings your committee learned the usual procedure of the Industrial Commission in approving medical bills.

Mr. John C. Root, chief claims adjuster, has principally to do with approving bills as they reach the office of the Commission. He informs us that 85 per cent of the bills are approved as rendered. In considering these bills he is guided by the schedule of fees as published in 1931. When it is difficult to classify a case according to this schedule and thus determine the correctness of the charge he asks the opinion of a regularly employed medical consultant. It was the feeling of your committee that the Industrial Commission itself was more liberal and fair in these matters than was the medical consultant.

During the two meetings your committee had with the Industrial Commission about 100 bills were brought up for consideration. Of this number the majority were referred by physicians or hospitals who were dissatisfied with the payment they had received for their services. A few were referred to the committee by the Commission itself.

The Commission is very definitely of the opinion that the fee schedule in use was prepared in collaboration with a committee from the Medical Society and that the members of this medical committee felt, at the time, that the schedule of charges was fair. During the meetings that your committee had with the Industrial Commission this fee schedule was rigidly followed with one notable and rather constant exception; namely, in the charge allowed for office and house visits. In these instances the schedule fee of $2.00 per office visit was frequently reduced to $1.00 and the schedule fee of $3.00 per house visit was usually reduced to $2.00.

Explanatory of such a procedure the Commission pointed out that some physicians habitually send in charges of only $1.00 for office visits and only $2.00 for house visits. And so, they reason, if such are the usual fees charged by many physicians, why should the Commission pay more? It is true that such charges are frequently sent in to the Commission. Whether the physician does this as his usual custom, whether as an indirect means of competing with his fellow practitioner, or whether through indifference to the schedule fee agreed upon, it matters not here. Suffice it to say that such a custom, by some, has been primarily responsible for the low fee usually allowed for such services and has deprived the medical profession of the State of much financial remuneration that was its due. In this same connection there was a strong tendency for the commission to disallow daily office visits. Unquestionably there are many cases that require prolonged daily visits and extensive dressings. On the other hand there was more than one case in which the bill had been palpably padded by adding unnecessary daily visits.

The fact that some physicians persist in charging less than the usual fee allowed by the Industrial Commission, while others feel so conscientiously outraged by the ridiculously low fee schedule that they have no hesitancy in padding their bills, has added greatly to the difficulty of establishing and maintainting a satisfactory procedure.

Our meetings with the Commission were most friendly. The new chairman, Mr. McMullan, is a delightful person and evinces a willingness to coöperate and to do anything that is fair.

The chief source of trouble seems to be the present fee schedule. We all are agreed that many of the charges allowed are pathetically small. A revision of this schedule will do much to remedy the dissatisfaction that has existed heretofore. And our very able and industrious President has been able to arrange with the Commission for such a revision. This has not yet been undertaken. At the time of this revision it will be necessary to work out a satisfactory understanding regarding the daily visits. It is also essential that all physicians doing industrial work become familiar with the schedule and make their charges accordingly. It is to be hoped that a copy of the new schedule can be placed in the hands of every physician in the State. In unusual cases and those demanding prolonged treatment it is most important that the final bill be accompanied by an ade-

quate detailed explanation so the Commission can more correctly evaluate the charge.

In conclusion let me remind you that your committee was appointed to advise with the Industrial Commission. It had no authority to make any changes in the existing fee schedule. Many of the contested bills that came before it were no doubt settled to the complete dissatisfaction of the contestant, but they were settled according to the existing fee schedule. If anything has been accomplished to make the relationship between the physicians of the State and the Industrial Commission more harmonious, to give each a better understanding of the difficulties of the other, and to lay a foundation on which each may progress to a better fulfillment of its duties, then we consider our time well spent.

The recently appointed commitee to confer with the Industrial Commission in regard to the minimum fee bill hopes to accomplish what you would have it do and to be able to talk to you about "bread and butter, facts and figures."

To the President and House of Delegates, we recommend the appointment of another committee to continue to act in an advisory capacity to the Industrial Commission at regular intervals during the next year.

DONNELL B. COBB, *Chairman,*
BATTLE A. HOCUTT,
FRANK C. SMITH.

. . . The President next called for the report of the Committee on Printing, which was presented by Secretary McBrayer, ex officio chairman, as follows:

REPORT OF COMMITTEE ON PRINTING

DR. MCBRAYER: Mr. President, I am glad to report for the Committee on Printing that we have performed our duty to the best of our ability and have taken care of the printing for the Society at an expense which seems to be, for the times, considering the many codes, etc., very satisfactory.

. . . The report of the Committee on Hospitals, Dr. J. F. Highsmith, chairman, was called for at this time, and Dr. Highsmith read his report, which was adopted.

REPORT OF COMMITTEE ON HOSPITALS

To the House of Delegates, Medical Society of the State of North Carolina, Pinehurst, North Carolina, Greetings:

As chairman of the Committee on Hospitals in North Carolina, I make the following statements:

The North Carolina Hospital Savings Association has been duly chartered and plans are being worked out whereby the North Carolina Hospital Savings Association may begin to function before a great while. We have found this to be quite a task and are endeavoring to lay the funda-

mentals in such a way that we will have a set-up in North Carolina which will be an example for other states to follow. Dr. Isaac H. Manning has labored faithfully and will doubtless make a report of its work in due time. At this time, conditions are clarifying themselves and we predict the movement will be a success.

A bill has been passed in the present Legislature protecting hospitals, doctors, and nurses in collecting their fees in automobile accidents where the parties are insured.

A bill has already passed the House and is now pending in the Senate at this time, which reads as follows: (Passed.)

A Bill To Be Entitled An Act To Aid General Hospitals in North Carolina Caring For Indigent Patients

WHEREAS, the general hospitals in North Carolina are continuously called upon to contribute their facilities free of charge to a large number of indigent patients, the use of which facilities contributes a very heavy charge upon the general hospitals in North Carolina and reduces to a very large extent the income of all such hospitals;

And Whereas, it is desirable that all of the general hospitals in the State coöoperate with local authorities in the treatment and care of indigent patients;

And Whereas, the local ad valorem taxation of such general hospitals place a burden on general hospitals which they ought not to be called upon to bear, in view of the large amount of work of a public character which such hospitals do free of charge to indigent patients; now, therefore;

The General Assembly of North Carolina Do Enact:

Section 1. That for and in consideration of the services rendered the public without charge and on account of the free use of their facilities by indigent patients, all property used exclusively for hospital purposes by said general hospitals, operating in North Carolina which furnish the use of their facilities to indigent patients shall be exempt from ad valorem taxation in the counties, cities and towns of this State, provided, however, that before any such hospital shall be exempted, it shall be required by the local governing boards of the counties, cities, and towns that there be filed with such board a certificate from the State Board of Health, certifying that such general hospital is approved by said State Board of Health.

Provided, further, that every such general hospital desiring to be exempted from ad valorem tax shall present to the governing bodies of any county, city or town, duly itemized and sworn statements which have been approved by the county physician or health officer, as necessary or proper, showing the performance of service to indigent patients, and such statements shall be allowed as payment on and credits against all taxes which may be or become due to any such county, city or town by such hospital on property strictly used for hospital purposes.

Nothing in this act shall create a liability upon any county, city or town for hospital bill.

Amend House Bill 1133 as follows:

That the provisions of this act shall not apply to Rockingham County or any city or town therein until approved by the governing body of said county or town.

Amend House Bill 1133 as follows:

Provided that this act shall not repeal any Public-Local Laws affecting Buncome County and the city of Asheville.

Section 2. That all laws and clauses of laws in conflict with this act are hereby repealed.

Section 3. That this act shall be in full force and effect from and after its ratification.

This Bill, No. 1133, passed the Senate as of May 6, 1935.

Respectfully submitted,

J. F. Highsmith, M.D.,
Chairman of Committee on Hospitals.

President McCain: Next is the report of the Committee to Confer with the State Nurses' Association. Dr. Addison G. Brenizer is chairman.

Secretary McBrayer: Mr. President, Dr. Brenizer gave me his report. He said he had held himself in readiness, but had not been called upon to render any service to the Nurses' Association and therefore had nothing to report.

. . . The report of the Advisory Committee to the Woman's Auxiliary was next called for. Dr. W. Houston Moore, the chairman, was not present, and this matter was deferred to the next meeting of the House of Delegates.

. . . The President called for the report of the Board of Medical Examiners. Dr. Benj. J. Lawrence, Secretary to the Board, stated that he had understood that the report would not be called for until the Wednesday meeting of the House of Delegates and that he did not have it with him at this time. The matter was deferred until the next meeting of the House.

. . . The report of the Committee on the Medical Society Foundation was next called for. Secretary McBrayer stated that Dr. Reid Patterson had a report to make but was not present at this time and suggested that the report be deferred until the next meeting. The matter was accordingly deferred until Wednesday.

President McCain: That completes the reports of the regular committees, and next we shall take up new business. Is there any new business to come up?

Dr. V. M. Hicks, Raleigh: I wish to offer the following resolution, Mr. President:

"BE IT RESOLVED that in the future the Secretary of this Society shall each year be chairman of the Committee on Arrangements for our annual meeting, and that it shall be his duty, after the place of meeting shall have been selected, to organize his local committee, industriously seek commercial exhibits, and promote scientific exhibits. He shall have the care of the funds derived from commercial exhibits and, with the approval of the Executive Committee, shall see that they are properly expended toward furthering interest in and entertainment at each meeting."

. . . Dr. Hicks discussed the resolution and then moved its adoption. Motion seconded. Dr. Carrington asked for the opinion of the Secretary, and Secretary McBrayer stated that anything the House of Delegates desired was satisfactory with him. The motion to adopt the resolution was seconded and, being put to vote, was carried.

. . . Dr. Paul Whitaker, Kinston, read the following resolution sponsored by the Lenoir County Medical Society and discussed it.

Resolution later withdrawn.

President McCain: The work done by the individual councillors is among the most important functions of the Society, and their reports are always interesting and valuable. The hour is getting late, however, and I should like to be instructed by the House of Delegates as to whether we shall have the individual reports of the Councillors tonight or ask them to write out their reports and send them in for publication in the Transactions.

. . . A motion was offered that the individual Councillors be asked to submit their reports in writing and send them in to the Secretary, to be published in the Transactions of the Society. Motion seconded; adopted.

Secretary McBrayer: The President-Elect has appointed the following Committee on the President's Message to the House of Delegates and on the President's Address: Dr. Roscoe D. McMillan, Dr. J. LaBruce Ward, Dr. Paul Whitaker.

May I suggest, also, that they draw up a resolution of thanks to the Board of Directors of the North Carolina State Sanatorium for their courtesy in granting our President leave of absence from his duties there as necessitated for his work as President?

President McCain: Is there any other business? Are there any announcements?

. . . Secretary McBrayer announced that the next meeting of the House of Delegates would be held at 2:30 o'clock Wednesday afternoon, May 8th, in the west parlor of the Carolina Hotel.

. . . No further business appearing, the House of Delegates adjourned, at 11:25 o'clock p. m., to meet on Wednesday.

MINUTES OF THE HOUSE OF DELEGATES

Wednesday Afternoon, May 8, 1935, 2:30 o'Clock

. . . The House of Delegates met in the west parlor of the Carolina Hotel, Pinehurst, on Wednesday afternoon, May 8, 1935, and was called to order by President McCain at 2:30 o'clock.

. . . President McCain stated that unfinished business would be taken up and that the first item under this heading was the resolution, introduced at the Monday night session, to increase the dues from five to ten dollars. This matter was discussed by Drs. Julian A. Moore, Asheville; George L. Carrington, Burlington; and C. W. Banner, Greensboro. Dr. Banner offered a substitute motion providing that the dues be increased from five to seven dollars, instead of ten dollars; and this substitute motion was seconded by Dr. Ben Gold, of Shelby. There was further discussion by the following: Drs. Forest M. Houser, Cherryville; Roy C. Mitchell, Mount Airy; L. B. McBrayer, Secretary; L. A. Crowell, Lincolnton; G. H. Macon, Warrenton; J. F. Highsmith, Sr., Fayetteville; S. R. Taylor, Greensboro; Julian A. Moore; Wm. H. Jones, Greensboro; Taylor; McBrayer; Moore; Taylor; Highsmith; Roy Norton, Rocky Mount; W. B. McCutcheon, Durham; W. F. Cole, Greensboro; Jas. M. Northington, Charlotte; Macon; and Taylor. Dr. B. J. Lawrence asked the President to express his views. Dr. McCain, asking Dr. Ringer, president-elect, to take the chair, stated that he was in favor of the increase to ten dollars, at least for the next few years. In answer to a question by Dr. Northington, the President said he believed more funds would be derived from increasing the dues to ten dollars than to seven, if all those present would acquaint the members of their county societies with the necessity for having more money for the use of the State Society.

. . . A motion was offered that the discussion be closed and a vote be taken. Seconded and carried. The President called for a rising vote on the adoption of the substitute motion, to increase the dues to seven dollars. Nine voted for the motion. The President declared it lost. The original motion to adopt the resolution for increasing the dues to ten dollars was then put to a rising vote, and 24 members of the House of Delegates voted in favor of it and nine against. The President declared it adopted.

. . . President McCain called for a further report from the Committee on Finance. Dr. Julian A. Moore, a member of the committee, moved that a budget be drawn up by the Finance Committee and submitted to the Executive Committee at its first meeting for consideration and action. This motion was duly seconded and was adopted.

. . . The report of the Committee on Encroachment on the Work of the Medical Profession was next called for and was presented by Dr. Jas. M. Northington, chairman. Following discussion by the President and by Dr. B. J. Lawrence, Secretary McBrayer moved that the report be accepted. Dr. Verne S. Caviness, Raleigh, offered an amendment to

provide that the phase of the report relating to the situation in Elkin be referred to the Executive Committee for action, which amendment to the motion was accepted by Dr. McBrayer. Motion seconded, put to vote, and adopted.

. . . Dr. B. J. Lawrence, Secretary to the Board of Medical Examiners, stated that the report of the Board would be furnished to the Secretary for publication in the Society's Transactions.

. . . The Secretary stated that the reports of the Advisory Committee to the Woman's Auxiliary, Dr. W. Houston Moore, Chairman, and of the Committee on the Medical Society Foundation, which had been postponed until this time, would be received and be printed in the Transactions.

New Business

. . . The President called for the report of the Nominating Committee. In the absence of the Chairman, Dr. C. B. Williams, Dr. Ben F. Royal, Secretary of the Committee, presented the following report:

OFFICERS

President-Elect—Dr. C. F. Strosnider.....Goldsboro
First Vice-President—Dr. J. K. Pepper.....Winston-Salem
Second Vice-President—Dr. E. S. Bulluck.....Wilmington

COMMITTEES

Medical Society Foundation

Dr. M. L. Stevens (1 year).....Asheville
Dr. L. B. McBrayer (2 years).....Southern Pines
Dr. W. S. Rankin (5 years).....Charlotte
Dr. Reid Patterson (4 years).....Charlotte
Dr. J. B. Sidbury (3 years).....Wilmington

Obituaries

Dr. C. A. Woodward.....Wilson
Dr. J. F. Abel.....Waynesville

Legislation

Dr. Benj. J. Lawrence, Chairman.....Raleigh
Dr. P. P. McCain.....Sanatorium
Dr. J. F. Highsmith, Sr.....Fayetteville

Moore County Medical Society Medal

Dr. W. C. Mudgett, Chairman.....Southern Pines
Dr. Deryl Hart.....Durham
Dr. Wm. deB. MacNider.....Chapel Hill

Printing

Dr. L. B. McBrayer, *ex officio,* Chairman.....Southern Pines
Dr. J. W. Dickie.....Southern Pines
Dr. E. C. Judd.....Raleigh

Hospitals

Dr. J. F. Highsmith, Sr.....Fayetteville
Dr. I. M. Proctor.....Raleigh
Dr. James W. Davis.....Statesville

Cancer

Dr. C. C. Carpenter, Chairman.....Wake Forest
Dr. W. D. James.....Hamlet
Dr. H. B. Ivey.....Goldsboro

Advisory to the Woman's Auxiliary

Dr. Verne S. Caviness, Chairman.....Raleigh
Dr. W. T. Rainey.....Fayetteville
Dr. I. Thurman Mann.....High Point

State Advisory Committee to State Director FERA

Dr. P. P. McCain, Chairman.....Sanatorium
Dr. Paul H. Ringer.....Asheville
Dr. C. F. Strosnider.....Goldsboro
Dr. Hubert B. Haywood.....Raleigh
Dr. L. B. McBrayer.....Southern Pines
Dr. John B. Wright.....Raleigh

Public Relations

Dr. Wingate M. Johnson, Chairman.....Winston-Salem
Dr. D. W. Holt.....Greensboro
Dr. L. B. McBrayer.....Southern Pines

Maternity and Infancy

Dr. J. B. Sidbury.....Wilmington
Dr. Frank A. Sharpe.....Greensboro
Dr. W. Z. Bradford.....Charlotte

Advisory Committee to Industrial Commission

Dr. Donnell B. Cobb, Chairman.....Goldsboro
Dr. Battle A. Hocutt.....Clayton
Dr. F. C. Smith.....Charlotte

Finance

Dr. Julian A. Moore, Chairman.....Asheville
Dr. W. M. Coppridge.....Durham
Dr. Vance P. Peery.....Kinston

Immunization Against Diphtheria

Dr. J. B. Sidbury.....Wilmington
Dr. Frank A. Sharpe.....Greensboro
Dr. W. Z. Bradford.....Charlotte

To Confer With Industrial Commission in Regard to Minimum Fee Schedule

Dr. Donnell B. Cobb, Chairman.....Goldsboro
Dr. J. B. Greene.....Asheville
Dr. John Stuart Gaul.....Charlotte
Dr. Hubert B. Haywood.....Raleigh
Dr. Charles I. Allen.....Wadesboro
Dr. Benj. J. Lawrence.....Raleigh
Dr. F. C. Smith.....Charlotte
Dr. Battle A. Hocutt.....Clayton

Medical Economics

Dr. Wingate M. Johnson, Chairman.....Winston-Salem
Dr. R. F. Leinbach.....Charlotte
Dr. C. R. Sharpe.....Lexington

DELEGATES

To American Medical Association

Dr. Wingate M. Johnson, 1936 and 1937.....Winston-Salem
Dr. W. T. Rainey, Alternate.....Fayetteville
Dr. M. L. Stevens, 1935 and 1936.....Asheville
Dr. H. A. Royster, Alternate.....Raleigh

To Medical Society of Virginia

Dr. C. B. Williams.....Elizabeth City
Dr. T. W. M. Long.....Roanoke Rapids
Dr. J. G. Raby.....Tarboro
Dr. R. S. McGeachy.....Weldon

To South Carolina Medical Association

Dr. J. B. Sidbury.....Wilmington
Dr. Addison G. Brenizer.....Charlotte
Dr. I. Thurman Mann.....High Point

To North Carolina Dental Society

Dr. H. B. Hiatt.....High Point
Dr. H. B. Ivey.....Goldsboro
Dr. R. M. Beam.....Lumberton
Dr. W. B. Dewar.....Raleigh

Member, State Board of Nurse Examiners
(From Medical Society)

Dr. C. H. Peete, 1 year.....Warrenton

Members, Board of Directors of Hospital Savings Association
(From Medical Society)

Dr. I. H. Manning (3 years).....Chapel Hill
Dr. L. B. McBrayer (2 years).....Southern Pines
Dr. John B. Wright (1 year).....Raleigh
Dr. Paul Ringer, President *ex officio*.....Asheville

Time and Place of Meeting

Pinehurst, May 4, 5, 6, 1936

. . . Dr. Julian A. Moore moved that the House vote on the report of the Nominating Committee, with the exception of the place of meeting. This motion was seconded by Dr. McBrayer. Carried.

. . . On motion, duly seconded, the report of the Nominating Committee, except as to the place of meeting in 1936, was adopted.

. . . The selection of a place of meeting in 1936 was next taken up. Dr. Julian A. Moore extended the Society an invitation to meet in Asheville. Dr. I. E. Shafer moved that this invitation be accepted. Dr. Paul H. Ringer indorsed Dr. Moore's invitation. Dr. George L. Carrington offered a substitute motion that the committee's report in this respect be accepted and that the meeting next year be held at Pinehurst, and this motion was seconded. Dr. Ben F. Royal said that he understood an invitation had been extended by Dr. J. K. Pepper to hold the meeting in Winston-Salem and that he thought it should come before the House if Asheville were considered. The substitute motion was then put to vote and was adopted, and the place of meeting in 1936 is Pinehurst.

. . . Dr. Benj. J. Lawrence moved that the Secretary be directed to prepare a suitable resolution of thanks and appreciation to the Board of Directors of the State Sanatorium for their courtesy in giving a leave of absence to the retiring President, Dr. McCain, for a sufficient length of time for him to attend to his duties as President of the State Society. This motion was seconded by Dr. Taylor and was adopted.

. . . Secretary McBrayer tendered the report of the Committee on the President's Message and Address and moved that it be adopted. The motion to adopt, being duly seconded, was put to vote and carried.

REPORT OF COMMITTEE ON PRESIDENTIAL ADDRESS

Pinehurst, N. C., May 7, 1935

Your Committee endorses the outline of the President relative to the dangers of socialized medicine and his vigorous defense of the encroachment on the profession. The committee further feels that individual phy-

sicians should familiarize themselves with the arguments against state medicine in order that they may express these arguments to their patients when the opportunity affords. Particularly do we recommend that each member of the Society procure a copy of the pamphlet prepared by the Indiana State Medical Society. This pamphlet may be obtained by writing to the Secretary of the Indiana Medical Society.

2. The committee commends his suggestions that family physicians be increasingly alert to the preventive aspects of medicine. By so doing they will tend to prevent the encroachment of public health work on private practice.

3. We urge the members of the profession to use every effort to do better pre-natal work, thus lowering infant mortality, which is no credit to the State.

4. His timely plea for early diagnosis of tuberculosis, and his remarks relative to the responsibility of the physician to the patient, his family, and the public, is endorsed.

5. The committee endorses the recommendation of the President that the chairman of the Committee on Economic Relations make every effort to familiarize the profession as a whole with the changing economic conditions of the present, particularly as they affect organized medicine.

6. His remarks relative to the work of the State Board of Health is endorsed.

7. While the committee realizes that the increase of Society dues from $5 to $10 per year, will inevitably work a hardship on some physicians, we feel that this increase is imperative if the Society shall function in an adequate manner to protect the profession against the present socialistic trend and at the same time properly guide the public in its attitude towards organized medicine, therefore your committee endorses the recommendation of the . . . Finance Committee, and President, in the matter of raising the annual dues.

8. Perhaps the most important suggestion made by our President was that concerning educational facilities for the physicians doing general practice. Your committee would urge that some plan be worked out either through the districts, through the counties, or through hospital staffs over the State for having post graduate courses once or twice yearly, in order that the general practitioner may have the opportunity to better qualify himself to serve the public. To this end we recommend the appointment of a committee on post graduate instruction, as recommended by your President.

9. Your Committee recommends that the North Carolina Medical Society express its appreciation and thanks to the Board of Directors of the North Carolina Sanatorium for the leave of absence extended Dr. McCain to carry on the duties of his office.

In closing the committee wishes to commend to the Society the untiring, unselfish and fruitful efforts of the retiring President, Dr. McCain.

This we can truthfully say, when the last golden glow of the setting sun has faded, daylight dies, and darkness is over all, success and influence in this world will not be measured by accumulated things but by the service a man has rendered. You have attained this success because you have lived well—laughed often—and loved much. You have gained the respect and confidence of intelligent men and the love of little children. We hope you have filled your niche, you have certainly accomplished your task and when you go to your reward you will leave this world better than when you found it because of your unselfish devotion to work and the invaluable service rendered to others.

Respectfully submitted,

Roscoe D. McMillan, *Chairman,*
John LaBruce Ward,
Paul F. Whitaker.

REPORT OF COUNCILLOR OF FIRST DISTRICT

May 11, 1935.

The First District has only one medical organization—the First District Medical Society. During the year we had two district meetings, first, in the fall at Elizabeth City, the second, March 28, 1935, at Avoca, N. C. Both meetings were largely attended, many scientific papers were read and discussed, the social side of both meetings was well taken care of.

At the second meeting at Avoca we were entertained by the Windsor physicians. At this meeting the fifty cent fee for making FERA examinations was considered inadequate and we went on record saying we would not do this work for this ridiculous fee. We also went on record as saying we did not believe the annual dues of five dollars sufficient to carry on the work of the Society in the proper manner. We voted by large majority to ask that these dues be raised to ten dollars.

The District Society wishes to thank the officers and committees of the State Society for the very careful and helpful work they have done during the year for the interest of the physicians of the State at large.

C. B. Williams.

REPORT OF COUNCILLOR OF SECOND DISTRICT

May 4, 1935.

Mr. President and Members, North Carolina State Medical Society,
Pinehurst, N. C.
Gentlemen:

As Councillor for Second District we wish to make the following report:

1. We have our county medical societies functioning well, some meeting every month, others irregularly.

2. We wish to recommend that all county societies in our district meet regularly once a month.

3. We would urge that the larger county societies invite the smaller counties that have no society to join with them.

4. We have written sixty letters to members urging that they pay up their 1935 dues and get in good standing.

5. We have visited the doctors and asked that they organize not to do government examining without fair fees for the work.

6. District meeting held in Greenville March 14. Progress in Second District good and everything peaceful and harmonious.

Respectfully submitted,
K. B. Pace, *Councillor Second District.*

REPORT OF COUNCILLOR OF THIRD DISTRICT

May 5, 1935.

Dr. P. P. McCain, President,
North Carolina State Medical Society,
Pinehurst, N. C.
Dear Doctor McCain:

The first regular meeting for the current year of the Third District Medical Society was held in Southport during the past summer with Drs. J. Arthur Dosher and William Dosher as hosts. There were fifty doctors in attendance. The program was good and the Doctors Dosher entertained us royally. The second meeting was held at Whiteville under the auspices of the Columbus County Medical Society last December, and a third meeting is to be held in Duplin County this month.

The prominence which the press and certain governmental agencies have given to the economic side of medicine, and the large amount of legislation with reference to the regulation of the practice of medicine has served to make doctors realize the importance of a strong state medical organization. This has and will result in an increased number of the doctors in our district becoming members of the State Medical Society.

Respectfully submitted,
J. F. Robertson, M.D., *Councillor Third District.*

REPORT OF COUNCILLOR OF FOURTH DISTRICT

During the past year little of interest has taken place in the Fourth District other than the usual routine. The great majority of the physicians are members in good standing, but there are still a number of active practitioners who have not aligned themselves with organized medicine. We hope to see most of these men become members before another year has passed.

Two of our counties have so few physicians as to make it difficult to maintain an active organization. The advisability of each of these counties uniting with an active adjacent county society is certainly worth consideration. The five remaining counties have live organizations with regular meetings and programs.

The District Society has continued to function actively and well under the presidency of Dr. M. Saliba of Wilson for 1934, and Dr. W. B. Kinlaw of Rocky Mount for 1935, with an average attendance of between fifty and sixty for each of the four meetings. In addition to excellent programs from our own membership, we have been addressed during the past twelve months by Dr. P. P. McCain, President, and Dr. L. B. McBrayer, Secretary, of the State Society; Drs. H. A. Royster and Ivan Proctor of Raleigh; Drs. C. C. Coleman and W. B. Porter of Richmond, Va., and Dr. Joshua Tayloe of Washington, N. C.

The recent (April) meeting at Weldon rounded out twenty-five years of continuous activity for the Fourth District, the Society having met regularly four times each year without a break throughout the entire twenty-five year period.

E. S. Boice, M. D., Rocky Mount,
Councillor of Fourth District.

REPORT OF COUNCILLOR OF FIFTH DISTRICT

Copy not furnished.

REPORT OF COUNCILLOR OF SIXTH DISTRICT

All of the county societies in this district, with the exception of one, have been visited and the various matters discussed by the Executive Committee have been laid before them. No problem of unusual interest has been brought up. There has been some intimation made to the Councillor that the Alamance-Caswell County Society wishes to dissolve into separate societies but the matter has not been officially brought to his attention.

Respectfully submitted,
Wm. Coppridge, M.D., *Councillor Sixth District.*

REPORT OF COUNCILLOR OF SEVENTH DISTRICT

Mr. President and Members of the House of Delegates:

Representing the Seventh District of the State Medical Society as Councillor, I have the following report to make:

Soon after being elected to the office as Councillor of my district I wrote to the secretary of all of the component county societies asking them for dates of their regular meetings so that I may make arrangements to attend meetings in each county. I also gave the secretary a list of all of the

delinquent members in his county and asked them to assist in getting these men to renew their membership in the State Society.

Immediately following this letter to the secretary of the different county societies I wrote the following letter to all delinquent members in the district, fifty-five in number.

"I understand that at one time you were a member of the State Medical Society. For some reason you have let your membership drop.

"The Medical Society needs your support, and all of the physicians of the State need the good that can be accomplished, for the profession, by organized medicine. Will you not renew your membership in the Society? Dr..... of ..... is secretary of your county society. See Dr..... and make arrangements to become an active member in county and state societies again.

"Hoping that you will see fit to once again affiliate yourself with organized medicine, both for your own good and for that of the profession, I remain,"

From this letter I received some very encouraging letters from some of the delinquents. I feel that this letter did good by reminding the men that they were not members and getting them to become active again.

At the same time the preceding letter was written I also wrote the following letter to all non-members in the district; eight was all I could learn of.

"I understand that you are not a member of your county and state medical societies. The societies are composed of and for physicians. The time is here that we as a profession must organize and remain organized. There is much that can be accomplished, for the profession, by organized medicine, but it must have the support of the whole profession. I do not believe that you want an organization working for you unless you are an integral part of that organization.

"Dr..... of ..... is secretary of..... County Medical Society. See Dr..... and have him present your name to the Society and become a member with us.

"Hoping that you will consider the matter and present your name as soon as possible, I remain."

It was impossible for me to determine how much was accomplished by this letter.

In my district all of the counties but two, which are very small, have societies. These societies have meetings at least once a month.

It has been my pleasure, during the past year, to visit each of these county societies, some of them several times. I would like to report that as far as I can determine all of them work in the greatest of harmony, excellent papers are presented at the meetings, and the attendance is very good as a rule.

We had our annual district meeting in the little city of Lincolnton the past year. One of the papers of the town gave us a whole page of welcome to the city. As guests we had our President and Secretary-Treasurer of the State Society who made excellent talks. The scientific program was handled entirely by members of the district, and the papers were a credit to any district in any state in the Union. Many favorable comments were voiced by all of the large number present. Our 1935 district meeting will be held in the fall at Wadesboro, and I am hereby giving each and all of you a cordial invitation to attend with us.

Respectfully,
FOREST M. HOUSER, *Councillor Seventh District.*

REPORT OF COUNCILLOR OF EIGHTH DISTRICT

Pinehurst, North Carolina, May 6, 1935.

Mr. President of House of Delegates:

I herewith submit my report as Councillor of the Eighth District for the year past.

No matter has arisen in any of the county societies requiring the attention of the Councillor for its adjustment.

In the visits to the county societies two points have been stressed. First, the immediate necessity for close medical organization and second, the need for raising the State Society dues to a standard which will afford the expenses of a full time secretary and of necessary representation at the State Legislature.

In January of this year a consolidation of Surry and Yadkin county societies was effected which has resulted in a more progressive organization with better programs and attendance than either society had before the consolidation. This society sends its delegate to this House of Delegates instructed to vote for an increase in State Society dues.

There have been two district meetings, one at Elkin in the Autumn, and one at Asheboro in the Spring, both of which had excellent programs and attendance.

The general attitude of the district is optimistic and progressive.

Respectfully submitted,
ROY C. MITCHELL, M.D., *Councillor Eighth District.*

REPORT OF COUNCILLOR OF NINTH DISTRICT

As Councillor of the Ninth District, I beg to submit this annual report.

The Ninth District is composed of the following county societies: Avery, Burke, Caldwell, Catawba, Davidson, Davie, Iredell-Alexander, Rowan, Watauga-Ashe.

Monthly society meetings are held in all the counties of the district

and usually are well attended. All of these meetings provide good programs and much interest is shown in organized medicine.

Our district meeting is held once a year and has the largest attendance of any district meeting in the State. Our last district meeting was held at Statesville in September, 1935. An excellent program was provided and Statesville, as usual, proved to be a great host to the large attendance of visiting doctors.

There has been a notable increase in membership in the State Society from the Ninth District. Several of the counties show a one hundred per cent state membership.

We want to report everything as peaceful and happy. Harmony and good will prevail throughout the district.

J. R. Terry, *Councillor Ninth District.*

REPORT OF COUNCILLOR OF TENTH DISTRICT

The spring meeting of the Tenth District Medical Society was held at Marion on May 16, 1934. Seventy-two members were present. The guest speakers were Dr. F. M. Hanes, Dr. F. C. Motley, Dr. R. C. Shawhan and Dr. W. S. Rankin.

The fall meeting of the Society was held in Asheville on October 24, 1934, with one hundred and five members present. The guest speakers were Dr. J. Shelton Horsley of Richmond and Dr. Stewart R. Roberts of Atlanta. Drs. P. P. McCain, L. B. McBrayer, G. M. Cooper and J. W. Davis were also honored guests. Dr. J. R. McCracken of Waynesville was elected president and Harold S. Clark of Asheville elected secretary for the ensuing year.

There is slowly but surely developing in the minds of the physicians of the Tenth District a realization of the vital necessity for everlasting loyalty to and unfaltering support of organized medicine. In such a universal spirit lies the only possible hope for the preservation of our professional institutions.

G. W. Murphy, *Councillor Tenth District.*

. . . No further business appearing, a motion to adjourn was offered, and the House of Delegates adjourned *sine die* at four-thirty o'clock p. m.

PROCEEDINGS

GENERAL SESSIONS

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

CAROLINA HOTEL

PINEHURST, N. C.

MAY 6, 7, 8, 1935

FIRST GENERAL SESSION

MAY 7, 1935

The First General Session of the Medical Society of the State of North Carolina convened in the Ball Room, Dr. Jno. Symington, Chairman, Committee on Arrangements, presiding.

Dr. Symington called the meeting to order.

Invocation by Rev. A. J. McKelway of Pinehurst.

DR. SYMINGTON: I have the honor, and it gives me great pleasure to introduce to you this morning a great man, the son of a great man, one who has spent much of his time and energy, in addition to his daily wearing duties, in traveling over the State, in attending meetings, I believe somewhat over seventy in number, in numerous conferences, interviews, etc., in the interest of the medical profession and the public good during the past year, the year of his tenure of office. A man who as a matter of fact needs no introduction, the President of our Society, Dr. P. P. McCain.

PRESIDENTIAL ADDRESS

THE SOCIALIZATION OF MEDICINE

By PAUL PRESLEY MCCAIN, M.D., F.A.C.P.

Mr. Chairman, members of the Medical Society of the State of North Carolina, Ladies and Gentlemen: For the great honor which you have bestowed on me in making me your president I have not words to express the depth of my gratitude. During the twenty-one years of my membership in this Society it has been my good fortune to be in rather close touch with a considerable proportion of those most active in the profession. These associations have been a constant source of inspiration and I welcome this opportunity to express to you my deep appreciation not only for the unfailing consideration which you have shown me personally, but also for the loyal support which you have always given me in the management of the North Carolina Sanatorium.

These personal contacts have given me an appreciation of the splendid type of men in the profession in North Carolina, both as to character and professional attainments. The majority of the members of our profession have kept pace with the rapid advances in the science of medicine. Although we have no very large cities, our hospitals and medical centers compare so favorably with those elsewhere that it is rarely needful for any citizen of North Carolina to go beyond her borders for the diagnosis and treatment of any condition however rare it may be. Most of the members of our profession are men of such high ideals and professional attainments that we are convinced that the profession in this State has retained the confidence of the public to a much greater degree than in many sections of our country.

THE SOCIALIZATION OF MEDICINE

Regardless, however, of the present apparent favorable attitude of the public in North Carolina toward our profession every member of our Society must be awake to the tremendous dangers which threaten both the public and our profession the country over from the socialization of medicine.

For a number of years there has been some agitation for socialized medicine. The depression gave further impetus to the movement. It has been largely sponsored by social agencies, philanthropic foundations, (so-called efficiency experts), politicians and even by a few physicians, most of whom are in administrative positions and who are not and who probably have never been in the actual practice of medicine. The fact that many of the advocates of socialized medicine are well intentioned and honest in their efforts makes the danger of what they may be able to accomplish all the more potential. The theory that such plans will provide adequate nursing, dental, hospital and medical care to all and that physicians, dentists and nurses will have surer and better incomes makes a strong appeal to those who are not thoroughly familiar with the problems involved.

At present there is no real demand for socialized medicine by the public, but the fact that its advocates have enlisted the sympathy of our great President, Franklin D. Roosevelt, to such an extent that he has taken the initial steps toward securing legislation for the socialization of medicine should make the profession realize it must give most serious study to the whole problem.

SICKNESS INSURANCE

Sickness insurance is the plan which the advocates of socialized medicine advance as the solution of all of our ills. Sickness insurance either on the voluntary or compulsory plan will not solve our problems. If a sufficiently large proportion of the low income group would join the voluntary plan, and if their income remained steady, this would go far toward solving many of the problems of adequate medical care, but no voluntary plan

has ever been devised which was sufficiently attractive to secure as members any large proportion of those unable to pay for their medical service. On the voluntary plan the young and healthy will not participate, and any plan carrying a large proportion of the sickly and aged is doomed to failure.

At its last annual meeting in June the House of Delegates of the American Medical Association gave special consideration to this problem. It went on record as opposing compulsory sickness insurance in all forms and it laid down the following ten fundamental principles upon which any scheme for the furnishing of medical care by the members of the American Medical Association and of all component societies must be based:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient, if able to pay, at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions by non-medical groups on treatment or prescribing unless formulated and enforced by the organized medical profession.

These ten principles were also unanimously endorsed by the Executive Committee of the Medical Society of the State of North Carolina.

The advocates of compulsory sickness insurance have been most active through every form of propaganda in trying to create a demand on the part of the public for the passage of laws embodying compulsory sickness insurance. The danger of their being successful, especially with the apparent support of President Roosevelt, was such that, as you already know, the Board of Trustees of the American Medical Association called a special session of the House of Delegates for the 15th and 16th of February to give special consideration to this subject. You are also familiar with the action of the special called meeting of the House of Delegates of the American Medical Association in reaffirming their previous action and in heartily condemning "all propaganda, legislation and political manipulation leading to all plans of medical practice which result in regimentation of the medical profession and the lay control of medical practice."

One of the principal arguments of the advocates of compulsory health insurance in this country is that it has been in operation for years in most of the countries of Europe, and their claim is that it has been found to be satisfactory. The facts, however, in no way justify their claim. *In none of the countries in which compulsory health insurance is in force is the mortality or the morbidity rate so low and neither are preventive measures so widely used as in the United States.* Under insurance the "will to be well is strangled," the number of neurotics and malingerers is tremendously increased, as is also the demand for needless drugs. Furthermore, compulsory insurance plans do nothing at all for furnishing medical care to the indigent sick.

Insurance plans also result in a very inferior grade of medical service. Physicians have to see patients on such a wholesale scale that there is not time for accurate diagnosis and proper treatment. We are told that treatment under insurance plans usually results in "a quick look, a stock prescription, a pat on the back and out the door." There is a tendency to convert physicians into mass production machines. The patient frequently has no choice of physician and the essential confidential relationship between patient and physician is lacking.

The results of health insurance are also most unsatisfactory to the medical profession. Physicians are under the domination of lay groups and politicians. Physicians are employed by lay directors on a salary or on the basis of the low bidder either on a fee or per capita basis. Honest, conscientious physicians have to bid against those who are unscrupulous and who are interested only in getting the practice. The desire of physicians to do thorough and scientific work is crushed. They are so weighted down with routine, records, reports and red tape that they have little time for study. Their time is taken up largely with endless reports to their lay supervisors. When health insurance is coupled with cash benefits for time

lost during the period of sickness, the evils for the physician are multiplied. The patients have a much greater tendency to malingering and the doctor often has to play the distasteful dual role of physician to the patient and inspector for the insurance company.

Furthermore health insurance is a most expensive method of rendering medical service. The administrative cost of compulsory health insurance is tremendous. The number of laymen to whom the physicians are responsible outnumber the physicians.

There is no group more anxious for every individual, be he rich or poor, to have adequate medical care than the organized medical profession. As so well stated in the report of the called meeting of the House of Delegates of the American Medical Association, "The primary considerations of the physicians constituting the American Medical Association are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medical science, the improvement of medical care and the provision of adequate medical service to all the people." It is to organized medicine that the public is indebted for the present quality of medical service, for the high ideals of the profession, and for the gift without commercialism of all the scientific discoveries and inventions of its individual members. What group has labored so tirelessly and earnestly to eradicate the very source of its livelihood? No profession can boast a record of more unselfish service. Without regard to personal comfort or safety the medical profession has ever responded to the call of the sick whether during the day or night, whether in sunshine or storm, in pestilences, in epidemics or in war. What other profession can boast so many members who willingly gave their lives that civilization might march forward?

Is it right and proper that the system of medical practice developed by such a profession through centuries of effort should be consigned to the scrap heap, and that a new system conceived by theorists and elsewhere found inimical alike to the best interests of the profession and the public should be substituted with the moral and financial backing of the government? Is it right also to ignore organized medicine in the development and discussion of plans for improving or supplementing the present plan of rendering medical service?

No group is more conscious of certain needed improvements than the organized medical profession. A profession which is so noted for scientific experimentation is also ready to experiment in certain fields of socialized medicine, but we must not countenance experiments which are likely to destroy the very foundation upon which all medical progress has been builded. Already in many sections of the United States various experiments in the furnishing of medical care are being conducted under local and state medical societies with the approval of the American Medical Association. We are told that approximately 150 such experiments are in

progress at the present time. In a country like ours no plan is applicable to all sections nor to all low income groups.

GROUP HOSPITAL CARE

The profession in North Carolina has not been asleep. In his remarkable presidential address last year Dr. Manning recommended that we approve group hospital insurance on a state-wide non-profit plan. In a number of cities such plans have been in successful operation long enough to prove that they are practicable. Such a state-wide plan was also approved by our State Society Committee on Hospitals and also by the North Carolina Hospital Association. During the present year committees from each organization were appointed to work jointly in the development of suitable plans. Dr. Manning, the Chairman of the Medical Society Committee, was made Chairman of the Joint Committee. The whole committee, and especially Dr. Manning, deserve our deep gratitude for working out a plan to include all the hospitals in the State belonging to the North Carolina Hospital Association. Mr. Graham Davis also deserves our special commendation for his splendid work on the committee. Dr. James W. Davis also gave much of his time and went to considerable personal expense in investigating group hospital insurance plans in operation elsewhere. The committee has developed plans whereby both individuals and families may participate. While group hospital care is primarily for the benefit of the low income groups, others may participate on the basis of a credit at the ward service rate toward more expensive accommodations and services. Patients will only be received by the hospitals on recommendation of their physicians, and will only be kept in the hospital while they are under their physician's care.

Since hospital costs constitute a very large proportion (23%) of the costs of sickness, the great majority of participants, relieved of these heavy costs by small annual or monthly payments, will be much more able to pay their physicians than would otherwise be the case. In England such plans have helped very greatly toward re-establishing a feeling of independence and self-reliance in the hearts of the low income groups. It is confidently expected that the plan will work to the advantage of the patients, the hospitals and the physicians.

Even in normal times most hospitals have their financial difficulties, and in recent years, with charity patients occupying the great majority of their beds, many of them have been in desperate straits. Although North Carolina ranks 45th among the states in the number of hospital beds in proportion to the population, and although the State has only one-half as many hospital beds in proportion as in the nation as a whole, approximately only one-half of the beds in North Carolina hospitals were occupied in 1933. In North Carolina the ratio is .3 of a day of general hospital care per person per year, while the average for the nation is .7. Is it not evident

that the citizens of North Carolina are not getting the hospital care that they should have and that North Carolina hospitals are not getting the support they need?

We feel that the plan of the Hospital Savings Association as worked out by the Joint Committee will enable practically anyone in the State to insure himself against the unpredictable hazard of a big hospital bill and will also be the means of saving the hospitals by filling their beds with patients for whom they will receive the cost of maintenance.

The Hospital Savings Association will be managed by a board of directors of twelve members, four chosen by the Medical Society, four by the Hospital Association and four from the public to represent the subscribers. A charter has already been drawn and the organization has been incorporated. It is estimated that it will require approximately $25,000 the first year to inaugurate the plan and to put it on a self-sustaining basis. We are greatly indebted to the trustees of the Duke Foundation for their generosity in donating this whole sum.

It will naturally require some time for the benefits of such an organization to be fully appreciated by the public. While of course the opportunity for membership will be offered to all, it is planned the first year to endeavor to secure large groups of industrial workers whose premiums will probably be paid in a lump sum by the companies employing them in part or entirely by payroll deductions. As soon as the benefits of group hospital care become apparent, as we feel sure they soon will be, we are in hopes that a large proportion of all low income groups, including tenant farmers, will be induced to become subscribers, and we confidently feel that when this hope is realized a long step forward will have been made in solving the problem of medical care for the people of North Carolina.

CARE OF THE CHRONICALLY INDIGENT

This plan makes no provision, however, for the indigent. Even the public has begun to realize that it is unfair to place the entire burden of furnishing medical care to the indigent upon the shoulders of the medical profession. The belated action of the Federal Government in sharing the burden of medical care for the indigent unemployed during the present emergency has been a great help not only in relieving the financial embarrassment of many physicians whose charity load constituted from 50 to 90% of their practice, but also by establishing a precedent for the recognition of governmental responsibility for the care of the indigent sick. Federal aid, however, is only an emergency measure and will not be permanent, and, furthermore, it is inadequate, since it only makes provision for a portion of the indigent patients. It is extremely needful that some plan be worked out by which county and city governments shall provide adequate medical and hospital care for the indigent. Hospital care should be on the basis of the cost to the hospital and not on the basis of a contract for a lump sum for whatever number of indigents might need

hospitalization; and the medical care of the indigent should be on the basis of a proportion of the usual professional fees. Placing the medical care of the indigent on the shoulders of the health officer and the employment of physicians on salary for this purpose have been found to be very unsatisfactory.

The Iowa State Medical Society has worked out a plan which has been in operation some years and which is said to be satisfactory to all parties concerned. The county officials make a contract with the *organized county medical society* to furnish medical care to the indigent. Formerly the contract was made for a lump sum, but in recent years it has been on the basis of 50% of the usual professional fees. The agreement with the Medical Society does not obligate its individual members to participate in the plan, but those wishing to do so register with the Secretary of the Society, who furnishes a list to the Welfare Department. The question of indigency is usually handled by the Welfare Department, but the Medical Society reserves the right of final decision in such matters. The indigent patient calls the physician of his choice from the list of those participating. Physicians are called in rotation for those who have no choice. The Medical Society through a special committee also passes on all complaints and on all questions concerning the needs, quality and length of medical service required. This plan embodies the principles adopted as fundamental by the House of Delegates of the American Medical Association.

Is it not time for organized medicine to take official action in letting the public know that the medical profession is willing and anxious for the indigent to have medical care, but that the profession can no longer bear the whole burden? The medical profession in Iowa is as highly respected, and probably more so, than in any of the other states, the ideals of the profession have not been lowered, the quality of medical service to the indigent is better safeguarded, since it is under the control of the medical profession instead of laymen and politicians, and the Iowa public is satisfied with the plan.

I heartily recommend that our Medical Economics Committee make a thorough study of this Iowa and other plans of rendering medical service to the chronically indigent and make specific recommendations for the adoption of a plan or plans best adapted to North Carolina, and that concerted action by all component county societies be taken to secure the coöperation of the county and municipal governments in putting such plan or plans into effect.

With the necessary arrangements made whereby all low income groups can for a small sum, through the Hospital Savings Association, secure hospital care, and with some plan provided for the hospital and medical care of the indigent, the problem of adequate medical and hospital care for the people of North Carolina would be largely solved. It is my belief that the medical profession will be ready to assume responsibility for the

medical care of the low income groups on the basis of what they will be able to pay.

PLANS IN OPERATION ELSEWHERE

In some of the larger centers of the country organized medical societies have worked out more elaborate plans for the medical care of the indigent and low income groups which are said to be quite satisfactory. In Alameda County, California, in San Diego, California, and in Wayne County (Detroit) Michigan, splendid plans are in operation, some of the features of which might be applicable to some of the larger cities and counties in this State.

It is encouraging that the American Medical Association is thoroughly awake to the dangers of socialized medicine and is doing all within its power to devise model skeleton plans for furnishing medical care to the indigent and the low income groups adapted to the needs of the populations of various types and sections of our country. A multitude of different problems in the various states and communities call for many forms of study and experiment.

We cannot experiment with compulsory health insurance, however, for when health insurance is put into operation vested interests and innumerable positions are created, institutions are established, and political forces are set in motion which can never be uprooted. On the other hand, as so well stated by Dr. Leland, "If we decide to take the other road, to continue the practice of medical principles which have proved their value through so many centuries and to develop into an organized whole all the resources of private and institutional medical facilities and public health and preventive medicine, we will have before us all the possibilities of flexible growth and development which are closed to us if we enter on the closely walled road of insurance institutions."

THE PRIVATE PHYSICIAN AND PREVENTIVE MEDICINE

The field of preventive medicine offers the wide-awake private physician splendid opportunities to increase his income, his prestige and his usefulness to the community. Should the family physician not take care of members of the families whom he serves in health as well as in sickness? Should he not manifest such a personal interest in his families and take such a pride in seeing that they are protected against preventable diseases that they will gladly pay him for his services in prevention as well as for answering sick calls? With the proper attitude he can do much toward educating the public to a fuller appreciation of the value of immunization, periodic health examinations, prenatal care and other preventive measures. Such an attitude on the part of the private physician will go far toward re-educating the public to look to him for this service instead of to the health officer and the public clinics, and it will do much toward lessening the clamor for the socialization of medicine.

Most health departments are more than willing for private physicians to shoulder the responsibility of rendering preventive medical services to their communities. The hearty coöperation of our own State health officials with our State Medical Society officials in endeavoring to secure legislation for the compulsory immunization of infants against diphtheria by private practitioners is evidence of the length to which our State Health Department is ready to go in encouraging private physicians to do preventive medicine. Perhaps the outstanding example of coöperation between the local health department and the private physician in the whole country is that embodied in the well known "Detroit Plan" by which the City Health Department has provided for each of the 1100 members of the Detroit Medical Society to become in substance a deputy health commissioner and his office a center for preventive medicine.

Needless to say, there is a vast amount of preventive medical work to be done. In spite of all the efforts to educate the public, only a small proportion of children are protected against diphtheria, and only 3% of rural children under one year, when they need it most, are so protected. The great majority of maternal deaths occur in women who have had no prenatal care. Countless children are handicapped by physical disabilities which are remediable. Most mothers need medical instruction in the feeding and care of their children. Periodic examinations for the whole family by the family physician should be the rule. 85% of the cases of adult tuberculosis the country over are not discovered until its victims are in the moderately or far advanced stage, when the disease is usually communicable and incurable.

The only hope for tuberculosis to be brought under control is for private practitioners generally to join heartily in the fight to discover cases in the early stage. Early tuberculosis is rarely accompanied by symptoms and it rarely gives any definite physical signs. When the disease makes one feel sick enough to consult a physician it has almost always passed the curable and reached the communicable stage. Almost always the patient has passed on the infection to those with whom he has been living and working. If we would find the early cases, we must make periodically a study of those who have been exposed, especially to those who have been closely exposed in the home and office while they are apparently well. When the private physician discovers a patient with tuberculosis his greatest professional and community obligations are to see that the patient does not further infect the other members of the household and to make a study of the contacts. The patient himself should of course be given the best of treatment, but usually he is moderately or far advanced when discovered. Many of the contacts who feel and look perfectly well have early, but spreading lesions. Any private physician can give the contacts the tuberculin test. The Sanatorium furnishes tuberculin free of charge to any physician in North Carolina. On all positive reactors he should get a history and make a careful physical examination. All positive reactors

should also have X-ray films made. Patients appreciate such precautionary measures and many of them are willing and can well afford to pay for such services. Such a progressive attitude on the part of the rank and file of the medical profession would foreshadow the essential eradication of tuberculosis.

I especially want to thank the medical profession of North Carolina for your splendid assistance in securing the appropriations for the Western North Carolina Sanatorium and for the much needed surgical unit and other improvements at our present Sanatorium.

THE STATE BOARD OF HEALTH

In the death last November of Dr. J. M. Parrott the State Board of Health and the Medical Society of the State of North Carolina lost one of their most distinguished leaders, and the State one of her most noted citizens. On account of sickness last year Dr. Parrott, for the first time in thirty-seven years, missed being present at our annual meeting. It is most fitting that special services have been arranged to honor his memory at the conjoint session tomorrow.

In the person of his successor, Dr. Carl V. Reynolds, we are most fortunate, especially at this time when state and socialized medicine are being so strongly advocated, to have as head of the State Board of Health one of our most able and experienced health officers and a physician who has spent enough of his professional life in private practice to have a sympathetic understanding of the problems of the private practitioner and to insure the heartiest coöperation with the medical profession in carrying on and extending the work of our great State Health Department.

We are greatly encouraged over the increased interest being manifsted in public health work. If the Wagner bill now being considered by Congress is passed, $8,000,000 annually will become available for distribution by the United States Public Health Service to the various states for state and local health departments on the basis of their needs, and $2,000,000 will be available to the United States Public Health Service for experimental work. It is to be hoped that the increased appropriations for health work made available by the Wagner bill will result in every county in North Carolina having a well organized health department, either as an individual unit or as a unit of a district organization. In a number of counties of North Carolina included in the Tennessee Valley Authority area there are also already available Federal funds for assisting in the establishment and strengthening of well organized health departments throughout this section of the State.

There is already an increased demand for well trained health officers. Our State Board of Health, anticipating this situation, and working in coöperation with the medical department of the University of North Carolina last fall established at Chapel Hill a training school for health officers.

The additional amounts for maternal and child health work, for crippled children and for child welfare provided in the Wagner bill should aid materially in improving health conditions, but we feel that the expenditure of these funds should be under the direction of the United States Public Health Service instead of under the Bureau of Child Welfare, a branch of the Department of Labor. We are especially glad that it is planned to provide for special demonstrations and research in maternal care and infant mortality in rural areas. In spite of the splendid work of Dr. G. M. Cooper and the efforts of the State Medical Society the maternal and infant mortality rates in North Carolina not only remained abnormally high, but to our distress there was a material increase last year in the infant death rate.

POST-GRADUATE MEDICAL EDUCATION

One of the greatest needs of the medical profession today is for suitable post-graduate courses for the general practitioner. There are numerous good courses for the various specialists, but there are few medical schools or centers which offer practical courses in general medicine and obstetrics such as are needed by the busy and none too prosperous general practitioners. This lack of post-graduate facilities is probably the main reason why such a small proportion of general practitioners take post-graduate courses. If general practitioners could get such courses at intervals of not less than three to five years, it would do much toward restoring their own confidence in themselves and the confidence of the public in their ability to diagnose and treat most of the ills of the community. At present 45% of physicians limit or partially limit their practice to a single specialty, whereas authorities tell us that only 18% are needed as specialists.

Participation in post-graduate courses would do much toward swinging the pendulum back to the restoration of the general practitioner to the central place in medical practice. The general practitioner who keeps abreast of medical progress is quite capable of doing much of the work now done by specialists, not only in diagnosis and treatment, but also in the prevention of disease. Such courses would also stimulate his interest in medical journals and in medical society meetings.

I wish to commend Dr. Northington and the other Charlotte physicians for the splendid and intensely practical "brush-up course" which for the last two years they have offered to the physicians of the Carolinas. The physicians in other larger cities of the State would do well to follow their example. Also the Mecklenburg County Medical Society and especially Dr. McKnight deserve special credit for the development of their splendid medical library. Some of the county medical societies, especially Guilford and Forsyth, also deserve special mention for their services in bringing to their meetings a number of the most noted authorities in various fields of medicine for lectures and for series of lectures to which they have graciously invited the other physicians in all the nearby counties. The

Pediatric Seminar conducted each summer at Saluda largely for the benefit of general practitioners is a most noteworthy undertaking and the medical profession of the South is deeply indebted to its sponsors. An original and one of the most valuable plans for post-graduate courses in the South was that sponsored several years ago jointly by the Medical and Extension Departments of the University of North Carolina and the State Board of Health.

If suitable courses were made available at reasonable cost, it might be well worth considering the advisability of requiring physicians either to take an approved post-graduate course of at least four weeks duration or to stand examinations every five years for the renewal of their license to practice medicine.

Some of our splendid medical colleges which are annually adding to the already too greatly swollen ranks of the medical profession would do well to convert their institutions into post-graduate instead of undergraduate medical schools. Also if some of our great philanthropic foundations, instead of endeavoring through the socialization of medicine to wreck the foundation upon which all sound medical practice has been established, would turn their attention and their millions toward making provisions for suitable post-graduate courses for general practitioners, they would deserve our lasting gratitude.

In view of this great need I recommend that a post-graduate educational committee be appointed from this Society to make a special study of the situation and to make recommendations for improving the facilities in North Carolina for post-graduate medical education.

THE IMPORTANCE OF CHARACTER

The United States has more physicians per unit of population than any other country in the world, and twice as many as the leading countries of Europe. It is estimated that a reasonably complete medical service can be provided in this country with one physician to 1200 people. At present we have one to 780, or a surplus of 35,000 physicians. In spite of more strict entrance requirements and the elimination of practically all but the grade A medical schools the number of medical graduates is steadily increasing. In 1922 there were 2,520 graduates, while in 1934 there were 5,038. Oversupply of physicians offers one of the most urgent and difficult problems of the profession. Overcrowding will lead to temptations to the lowering of ethical standards and the forsaking of high ideals by fee splitting, illegal operations, padding of bills, professional jealousies and misunderstandings.

In the face of such conditions is it not essential to further limit materially the number of students entering medical colleges? The premedical educational and scholastic requirements are already such as to eliminate those without unusual mental qualifications and are probably sufficiently restrictive.

Should we not make more rigid the requirements concerning the character and ideals of those who are accepted as students of medicine? Are not trustworthiness, honesty, a sense of fair dealing, a high sense of duty, a sincere desire to be of service, unselfishness, and ability to coöperate with other prime essentials to true success in medicine? Most of the just criticisms directed against the medical profession result from the actions of physicians who entered medicine not for the glorious opportunity of service which the profession affords, but from a desire to be cloaked in its respectability or for the sordid purpose of getting rich. Physicians who are not satisfied with a modest competency sufficient to maintain their position in society with dignity and to provide reasonably for their care during their declining years, should have engaged in business instead of the practice of medicine. The few physicians who endeavor to enhance their own prestige by attempting to discredit their fellow practitioners are a disgrace to the profession and almost invariably injure themselves more than their confreres. Should not organized medicine take a firmer and a bolder stand in dealing with any physician who does not govern his actions by the ethical standards of our noble profession?

Let us hope that the efforts which are being made to wrest the control of the practice of medicine from the organized medical profession will so arouse in our individual members a spirit of coöperation and comradeship that we shall be inspired to forget our own selfish interests and work for the good of medicine and for the best interests of our profession as a whole, whose record, in the words of Dacosta, "Is lustrous with achievement, and the traditions of whose service speak in a thousand voices to the noblest instincts of the human mind."

. . . Referred to committee appointed by the House of Delegates.

PRESENTATION OF PRESIDENT'S JEWEL TO PRESIDENT PAUL P. McCAIN

By President-Elect Paul H. Ringer

Members of the Medical Society of the State of North Carolina, Ladies, Guests and, finally, Mr. President:

It is a great professional and personal privilege to be selected to present to you the President's Jewel on this occasion. It is a professional privilege because it signifies the presentation of an emblem to one who has been signally successful in the performance of his duties, and who has filled the office of chief executive in a manner second to no one who has occupied this position during the twenty-nine years that I have been a member of this organization. It is a personal privilege because in presenting this jewel to you, I do so to a time-honored friend, one whom I hold in warm affection.

In one of the closing paragraphs of the address that you have just read to us, a paragraph on character, you have, wholly unwittingly, epitomized

your own professional life. Because of the unique position that you occupy in our commonwealth, you have had the opportunity of being of greater personal service to more physicians and to more laymen of the State than possibly any other Doctor of Medicine. Because of your high qualities of mind and heart you have been able to capitalize this opportunity and to make yourself respected, liked and loved probably to a greater extent than any other member of the Society.

During your administration you have had your troubles, that I know; you have had your burdens to bear and your fights to wage. Time and again you have had to show heroic qualities, not that type of heroism that appears in the limelight and that is cried from the housetops, but a quiet, unceasing heroism that shows itself day by day in countless ways, a heroism that consists in fighting against ignorance and prejudice and for that which is good, idealistic, noble and righteous. A verse from the old Greek poet Bacchylides comes to mind:

> "Countless are the high qualities of heroes, but one there is set on high far transcending all. His it is who, in whatever work his hand finds to do, steers his course with righteousness of heart."

This you have done; and in presenting to you this President's Jewel, on behalf of the membership of the Medical Society of the State of North Carolina, I wish for you in the future good health, good luck and Godspeed.

Dr. Symington: Next in order is the report of the Committee on Moore County Medical Society Medal and Presentation of the Medal for the best paper presented at the last meeting. Dr. A. H. McLeod of Aberdeen is Chairman of that committee. Other members of the committee are Dr. Wm. deB. MacNider, Chapel Hill, and Dr. Deryl Hart, Durham.

Dr. McLeod: It gives me pleasure to announce that Dr. Fred E. Motley of Charlotte was chosen as the winner of the medal for the 1934 session. Dr. Motley came forward and Dr. McLeod presented the medal to him.

. . . The President assumed the chair.

Dr. John B. Cranmer, Chairman Obituary Committee: Mr. President, Fellows of the North Carolina Medical Society, Ladies and Gentlemen:

I am in this place today by reason of the death of the former chairman of our Obituary Committee, Dr. C. A. Julian of Greensboro, "who never made a brow look dark nor caused a tear but when he died."

A suitable "In Memoriam" has been written by those who knew him best and loved him most, and it will be published in our Transactions, together with tributes to those others of our fellows who have left us during the year.

I have been elevated to the chairmanship by our honored President and I call upon you here and now to share with me in the sorrow that we feel in the death of our beloved fellows and in the sympathy that we hold for their loved ones and their friends back home.

I shall now read the names of those who have passed away since our last meeting. After the reading of these names and at the sound of the President's gavel will you please stand for one minute with bowed heads for meditation and silent prayer for those "whom we have loved long since and lost awhile."

Then again will the President's gavel be heard and this solemn meeting will stand adjourned.

John B. Cranmer, M.D., *Chairman,*
J. F. Abel, M.D.,
The Obituary Committee, North Carolina Medical Society.

NORTH CAROLINA DOCTORS WHO HAVE DIED DURING THE YEAR

Dr. C. D. Bell ..... Wilmington
*Dr. M. H. Brawley ..... Salisbury
Dr. Louis N. Burleyson ..... Cabarrus
Dr. Charles G. Bryant ..... Jonesville
*Dr. E. D. Dixon Carroll (Honorary Fellow) ..... Raleigh
Dr. Goode Cheatham ..... Henderson
Dr. Chas. M. Clodfelter ..... Lexington
*Dr. Samuel S. Coe ..... High Point
Dr. J. Worth Davis ..... Tobaccoville
Dr. H. A. Denson ..... Bennett
Dr. Frank E. Deeds ..... Winston-Salem
Dr. Hubert C. Dixon ..... Leaksville
Dr. James A. Duguid ..... Vanceboro
Dr. Robert M. Fields ..... Goldston
*Dr. William R. Goley (Honorary Fellow) ..... Graham
*Dr. A. W. Goodwin (Honorary Fellow) ..... Raleigh
*Dr. Glenn Grose ..... Harmony
*Dr. Jno. E. Hart ..... Wadesboro
Dr. S. McD. Henderson ..... Charlotte
*Dr. E. T. Hollingsworth ..... Goldsboro
*Dr. Thel Hooks (Honorary Fellow) ..... Smithfield
Dr. Preston C. Jenkins ..... Roxobel
*Dr. Clara E. Jones (Honorary Fellow) ..... Goldsboro
*Dr. Charles S. Jordan (Honorary Fellow) ..... Asheville
*Dr. Charles A. Julian (Honorary Fellow) ..... Greensboro
*Dr. W. A. Kirksey ..... Fayetteville
*Dr. Paul P. Lane ..... Wilson
Dr. Elisha W. Lister ..... Elizabeth City
*Dr. Everett A. Lockett ..... Winston-Salem
Dr. J. V. McGougan ..... Fayetteville
*Dr. Benj. F. McMillan (Honorary Fellow) ..... Red Springs
*Dr. A. F. Mahoney ..... Monroe
*Dr. Thos. M. Misenheimer ..... Charlotte

* Fellow in good standing.

Dr. Jesse H. Mitchell.....Ahoskie
Dr. John L. Moore.....Wendell
Dr. John T. Nicholson.....Washington
Dr. W. H. Nicholson.....Henderson
*Dr. James M. Parrott (Honorary Fellow).....Kinston
Dr. A. K. Parrott.....Kinston
Dr. Joseph B. Phillips.....Middlesex
Dr. E. M. Poate.....Southern Pines
Dr. David M. Prince.....Laurinburg
Dr. J. W. Rodwell.....Mocksville
Dr. Lee R. Salmons.....Winston-Salem
*Dr. D. E. Sevier (Honorary Fellow).....Asheville
*Dr. W. G. Shaw.....Wagram
Dr. R. B. Slocum.....Wilmington
*Dr. Jos. L. Spruill.....Jamestown
*Dr. E. M. Summerell (Honorary Fellow).....Mill Bridge
*Dr. David T. Tayloe.....Washington
Dr. Wm. S. Taylor.....Mount Airy
*Dr. S. E. Teague.....Hamlet
Dr. Jacob C. Tilson.....Marshall
Dr. J. Mel Thompson.....Graham
Dr. L. S. Webb.....Morganton
Dr. Harold J. Weaver.....Brooks Cross Roads, Statesville
Dr. W. P. Wilson.....Madison
*Dr. Chas. E. Wilkerson.....Greensboro
Dr. George C. Wingate.....Charlotte

DR. CHARLES DEEMS BELL, Wilmington

By Ernest S. Bulluck, M.D.

Dr. Charles Bell was born near Long Creek, Pender County, North Carolina, on September 3, 1858, and died in Wilmington, N. C., June 17, 1934. He was educated at Trinity College and graduated at the University of Maryland. Later he did post-graduate work in a group of New York hospitals.

He practiced in Gatesville for five years, then moved to Wilmington where he spent the greater portion of his professional life. In 1912 he moved to Gates County, Virginia, where he combined a rural practice with the life of a country gentleman, while he managed a large estate. In 1928 he could no longer resist the professional urge. He returned to Wilmington, re-established himself, and continued his professional work until the time of his death.

In 1887 he married Miss Susie Eure, the daughter of a distinguished judge. They had two sons, Malvern and Mills, and later a foster daughter, now Mrs. Stewart R. Glenn.

Dr. Bell was a successful practitioner when measured by all the standards. Handsome in appearance, gracious in demeanor, he was a physician of the old school when that school was at its best. His horse, his buggy, the poise with which he sat and held the reins, his graceful bow

* Fellow in good standing.

and affable smile stamped him as a leader of his time. Divinely tender, compassionate, medically aggressive, commanding, a rock of Gibraltar in the home with sorrow.

Professionally he was ethical to a degree hardly understood today. The wake of his professional career washed upon the shores waves of tender generous service that leave him endeared to those who depended upon his guidance. He was a companion to my father and a friend to me. I knew him well and I fear I may not know his like again.

MASON BRAWLEY, Salisbury

Dr. Mason Brawley was born near Mooresville, N. C., fifty-one years ago, being the son of the late J. W. and Mrs. Julia Reba Brawley. His early education was obtained in Mooresville, attending the high school there; later a student at Davidson College, N. C. After that he attended Erskine College at Due West, S. C. His medical education was received from the North Carolina Medical College which was located in Charlotte, N. C., at that time. He obtained his doctor's degree in 1910. His interneship was served at the German Hospital in Brooklyn, N. Y. He later had two years of service in the Brooklyn Eye & Ear Hospital. Upon completing this experience he located in Salisbury, N. C., being associated in the specialty of eye, ear, nose and throat with his brother, the late Dr. Robert Vance Brawley. He continued in this work until the death of his brother and after that he carried on in the same offices, having taken on an associate.

Dr. Brawley entered the service of the U. S. Army October 4, 1918. He was honorably discharged August 30, 1919, having served with the rank of first lieutenant in the Medical Corps during his stay in the army.

Mason Brawley's patients loved him, they would come for miles to see him. There was a kindly, encouraging twinkle in his eye that made them trust him and kept them loyal to him. The very name Brawley, that he and his illustrious departed brother, the later Dr. Vance Brawley, had established in Salisbury for the past years in the eye, ear, nose and throat field, meant to his patients, confidence, trust and satisfaction. A name that after the death of his brother he fully assumed, and he endeavored to keep the standard up, of which he was justly proud, and to which he looked with almost reverence. He seemed to have made an unwritten pledge to his dead brother, and to have the hope, that at his death the heritage would descend on some future doctor in the family. He was always conservative, adhering consistently to his teachings and always carrying out standard accepted methods. He had a way of using common horse sense in the many situations that would constantly occur and by means of his tact and skill, usually gave satisfaction. His diagnostic skill and medical judgment were fully recognized by his associates as well as by his patients. His frankness and honesty were equally outstanding. Everyone knew that they could depend on him in every way.

Dr. S. M. Henderson
Charlotte

As a member of the board of directors of his bank, Dr. Brawley, during the bank holiday declared by President Roosevelt, through his sense of uprightness and honesty, gave his services unstintingly in bringing about the reopening of the bank on a sound basis. He contributed liberally to this end.

Everyone knew Mason Brawley, everyone stopped in passing to speak to him, or sought him out to talk to him. His strong personality endeared him to one and all. He was valuable to the Medical Society and did much to keep it cemented together and to help maintain its high standard of professional ethics and to uphold the traditions that are so dear to it. He was a faithful member and attendant upon all its meetings. In his untimely death the Society has lost heavily; the type of man we so urgently need to carry on.

Dr. Brawley was dearly beloved by his own people and highly respected and admired by them. Theirs has been a heavy loss occasioned by his passing. The man himself was genial, lovable, with a heart of gold and it may be long years before another Mason Brawley will be found among us.

April 5, 1935.

J. E. Stokes,
H. H. Newman,
C. W. Woodson,
Committee, Rowan County Medical Society.

DR. SIMRIL McDOWELL HENDERSON

By J. P. Munroe, M.D.

The suddent death of Dr. Simril McDowell Henderson removes another prominent figure from this community and a physician highly regarded in both the city and county. He lived and practiced in Mecklenburg County for about twenty-five years, then he moved to Charlotte. In return for his faithful service he was given love and loyalty from all who came in contact with him, for he was a friend, adviser and physician.

He was born in the old Henderson home at Croft on January 13, 1869, and passed away on April 13, 1935. He was the son of the late Dr. Joseph McKnitt Henderson and Leonora Simril Henderson. On his paternal side he was the great, great grandson of John McKnitt Alexander and Major John Davidson of Revolutionary fame. In 1908 he married Miss Pearl McArton of Harnett County, who with two doughters survive him.

His college preparatory work was done at Old Hopwell Academy. From there he went to Davidson College. He received his medical course at the University of Maryland, graduating in 1894.

Coming from historic forebears in Mecklenburg, Dr. Henderson maintained in his personal and professional life those high standards of ideals of nobility, which built up for him a reputation that was an admiration of his fellow citizens.

His church activities were many and for years he was an elder in Sugar Creek Church, his old home church. At the time of his death he was elder of Caldwell Memorial Church and the large crowd that attended his funeral was a testimony of love that the members held for him.

He was President of Mecklenburg County Medical Society in 1928, and the President, with members of the Society, attended his funeral in a body.

DR. CLARA JONES IS LAID TO REST

Throng Attends Final Rites for Beloved Goldsboro Woman

Goldsboro, Nov. 20.—Funeral services for Dr. Clara E. Jones, beloved Goldsboro woman and prominent physician, were conducted from the First Presbyterian Church by her pastor, Rev. Peter McIntyre, at 11 o'clock Tuesday morning. The church was filled with friends from Goldsboro and many other cities and towns. The entire central section was occupied by the pallbearers, relatives and employees of the State Hospital here, where she had been a physician for 26 years. Honorary pallbearers were the doctors and dentists of Goldsboro.

Active pallbearers were: R. A. Creech, R. M. Purser, Spicer Holmes, Fred Parker, Jr., Thomas O'Berry, and Leslie Weil.

Mr. McIntyre read a poem called "The Summons," composed many years ago by a relative of Dr. Jones, Mary Eliza Scott. The author lived to be 93, and wrote it shortly before her death.

Mr. McIntyre paid a high tribute to Dr. Jones. Interment was in Willowdale cemetery.

DR. CLARA ERNULL JONES, A CAROLINA ANGEL

By Nell Battle Lewis

"She loved God with her whole heart and served Him with her whole life." Thus her pastor epitomized the character and career of the late Dr. Clara Ernull Jones at the recent service in the First Presbyterian Church in Goldsboro which concluded one of the most beautiful and useful lives ever spent in and for North Carolina. For Dr. Jones' love and service of God and its corollary,—as true love and service of God always has,—in blessing and usefulness to her fellowmen.

The influence of a saintly life can never be adequately analyzed. Its subtle permeation of the lives and characters of others suggests some rare perfume, some fragrance sweetening all around it and rejoicing all who come in contact with it. ". . . golden vials full of odours, which are the prayers of saints."

Though despairing of adequate analysis, one might write of Dr. Jones from several angles. One might describe her as a wife and mother, for she was deeply devoted to her doctor-husband and her seven children, and to

the end preferred her domestic and social title, "Mrs. Jones," to her professional one. One might write of her as one of North Carolina's pioneer women physicians, for only one woman preceded her in the practice of medicine in this State, and none preceded her in her special field, the care of the Negro insane. But in the most fundamental aspect of her character, the one which enriched and empowered all the rest, she was a Christian,—without exaggeration it might be said, a Christian saint. In singular degree she possessed the mind of Christ,—comprehensive and active good-will, charity, love.

SYMPATHY FOR HUMANITY

In the eulogy of Dr. Jones which, at her funeral service, the Rev. Peter McIntyre gave at the conclusion of her favorite hymn, "How Firm a Foundation, Ye Saints of The Lord," her pastor spoke of "the multitude of her benefactions" which resulted from "her deep sympathy for and interest in humanity," and gave as the key-notes of her character "faith and courage"—to which one might appropriately add, humility and love.

"No one becomes a saint in his sleep," someone has said. Nor did Dr. Jones. This lovely character flowered and bore fruit through storms as well as sunshine. This was a personality too sensitive and passionate not to be deeply wounded by the buffetings of fate to which it was subjected; and the depth of its wounds was the measure of the triumph of the spirit which surmounted them, of the alchemy of the noble nature which transmitted them into blessings.

The main public channel of Dr. Jones' usefulness was the care of the Negro insane in the State Hospital at Goldsboro, on the staff of which she served for more than a quarter of a century. But the private channels were legion. They led into many lives, lives of many different sorts, ranging from that of the shyest little Negro girl whom Dr. Jones taught in her Sunday School at the hospital to that of the distinguished Southern educator upon whom as the young principal of the Goldsboro schools her beneficent influence was shed. It is hard to think that anyone who came in contact with Dr. Jones for any length of time could fail to have been affected by her for good. She cared intensely for people, for all sorts and conditions of men, and by the surest law of reciprocity they cared, in turn, for her.

Clara Ernull Jones was born in New Bern, N. C., on December 1, 1847, the daughter of Freeman Ernull and Catherine Simmons Ernull. She was descended from some of the Palatines who, under the leadership of the Baron de Graffenried, settled New Bern in 1710. When she was about eighteen months old, her father died, and some six years later her mother remarried, dying when Dr. Jones was 11. After her mother's death, Dr. Jones continued to make her home with her stepfather, Nathaniel H. Street, as a beloved daughter until her marriage. It was characteristic of her to have made of this step-father a devoted friend for whom she named

one of her sons. That was the sort of thing she continued to do all her life. She seemed happily unable to distinguish between step-kinfolks and in-laws and her own blood relatives. So her stepfather became a father to her; later her daughters-in-law became at heart her daughters; and even their second husbands, her sons. Her affection had extraordinary compass, and, apparently, equally extraordinary response.

On her seventeenth birthday, December 1, 1864, she was married to Dr. William Joseph Jones, a well-known general practitioner of Greene County. The wedding took place at Snow Hill where her family was refugeeing. After her marriage she lived for a number of years in Greene County, then went to Goldsboro where she spent the rest of her days. She had seven children, six sons and a daughter, of whom three sons lived to be grown. All three studied medicine, two practicing, but the other dying before his medical education was completed.

MEDICINE AT FORTY-THREE

In 1890, when she was almost forty-three years old, had been married for twenty-six years, and had had seven children, she decided to study medicine. In those days that was a courageous decision for a woman, especially a Southern woman, for in the conservative South prejudice against women in the professions was slow to yield, and in 1890 it was bitter. At the time when Dr. Jones chose this life-work the typical woman doctor was caricatured by her opponents as an unwomanly female wearing mannish clothes and behaving, in general, in a most obnoxious and bumptious manner. No one could have been farther from that caricature than the modern and unassuming Goldsboro matron of forty-three who enrolled herself as a student in the Woman's Medical College in Philadelphia, where she could be near her two elder sons who were studying medicine in the Jefferson Medical College in the same city.

Graduating as a physician in 1894, Dr. Jones received her North Carolina license to practice in the same year, thus becoming the third North Carolina woman to be licensed to practice medicine, and the second licensed to practice medicine in this State. In 1871 Susan Dimock, of Washington, N. C., had graduated in medicine from the University of Zurich after having been denied admission to medical schools in this country, and had begun practice at the New England Hospital for Women and Children in Boston. In 1884 Annie L. Alexander, of Charlotte, had received her degree from the Woman's Medical College of Pennsylvania, and had begun practice in North Carolina. These were the only North Carolina women doctors who preceded Dr. Jones.

AT THE STATE HOSPITAL

For a short time she engaged in practice with her husband and eldest son in Goldsboro, treating mainly diseases of women. In 1896, without application on her part, there was offered to her the position of resident

physician in charge of the women's wards at the State Hospital for the Negro Insane in Goldsboro. She accepted this, and served in that capacity for twenty-six years, until she was seventy-five years old, when she retired. After her retirement, she spent some time in Raleigh, New York, Goldsboro, and New Bern, returning to the hospital, to pass the rest of her days in the home of the Superintendent, when Dr. W. C. Linville, a devoted son to her, took that office. It was here that she died on November 19, 1934, in her eighty-seventh year. One of the buildings at the institution is named in her honor.

In her benefactions the right hand of Dr. Jones seldom knew what the left hand was doing. She was unostentatious in her good works. No trumpet was ever blown to herald her service, which explains why the State knows comparatively little of her fine contribution to its welfare at the Negro hospital. To begin with, this was not the sort of thing in which one gains much mundane glory, ministering as best one could day after day to deranged and darkened minds among the State's humblest citizenship, attending "crazy" Negroes,—not a life-work for the front page. But in its very lack of ostentation, its very humility, as Dr. Jones performed it, it was a wonderful life-work.

PATIENTS WERE HER FRIENDS

To Dr. Jones her patients were her friends. When a Negro woman who had sat in the immobile anguish of involutional melancholia for two years came at last to herself, to be restored to her family in health, no one rejoiced more in her recovery than the woman doctor who every day had done all she could to comfort her, to urge her to keep up heart and faith. To Dr. Jones this was a woman come back to life, a dark sister who had been lost but was found, and with whom it was fitting to rejoice. The report is that Dr. Jones' passage through wards where patients were confused and noisy could bring temporary order and silence. Sometimes she would calm the disturbed by having attendants start the singing of spirituals in which the patients would soon join. She treated these unfortunates with sympathy as well as skill, often saying that but for the grace of God her lot and theirs might be reversed.

When the Lord, inviting His true followers into the inheritance of the kingdom prepared for them, commended their active ministrations to the hungry, the thirsty, the stranger, the naked, the sick and the imprisoned, He did not specifically mention the insane. But who can doubt the members of this afflicted group, of all sufferers the sorest, are included among "the least of these" in helping whom the Christian helps his Lord. We shall not be irreverent if we imagine history's most compassionate Voice saying to a white-haired woman doctor, "Come, you blessed of my Father. I was deranged and despairing behind the bars at Goldsboro, and you comforted me. For inasmuch as you did it unto the least of these my brethren, you did it unto me."

DESERVED AN LL.D.

A few years before her death there was an effort to get the University of North Carolina to confer upon Dr. Jones the honorary degree of Doctor of Laws, for no woman in the State ever deserved it more. But the effort failed—which, perhaps, was just as well, for Dr. Jones, honored only in the hearts of her host of friends, was doubtless more in character than Dr. Jones publicly acclaimed.

In preparing to offer her name for the University's consideration, one of her friends wrote of her:

"Born and reared in Craven near the town of New Bern, surrounded by the traditional social culture of one of the State's oldest communities, she had the vision and the courage to enter a profession none too cordial toward the admission of women and to become a pioneer in a social and inter-racial field untouched by women in North Carolina.

"For 26 years she served the State in one of its most difficult social tasks with genuine sympathy, unusual gentleness and unselfish devotion, and by her influence in its management made this institution (the Negro hospital) a model for similar institutions throughout the South."

HAD AMAZING VITALITY

Dr. Jones had amazing vitality. After she was 75 years old she suffered three serious accidents in each of which bones were broken, and any one of which would have incapacitated an ordinary old lady for the rest of her life. But no more physically than spiritually was Dr. Jones an ordinary old lady. On the contrary, she was a very extraordinary one. Told by her physicians that a broken pelvis could never reknit sufficiently for her to walk again, in a few months she is discovered tripping briskly and blithely up and down stairs with a fine scorn of even a cane for aid.

A friend of Dr. Jones, herself one of the State's first citizens, says that when she first met "Santa Clara," soon after she had come to Goldsboro to live, she wondered why Dr. Jones "took the trouble to be so sweet." She thought that she would watch her to find the explanation. When, at all subsequent meetings she found her exactly the same, she soon realized that the source of Dr. Jones' sweetness was at the core of her nature, that she was not trying to be sweet, but that she could not be anything else.

No one was ever more generous in judgment of her friends than Dr. Jones. She looked at them all through indulgent affection's rosy glasses, and saw only the best in them, interpreting them thus to others.

Every day for years Dr. Jones read the 13th chapter of St. Paul's first epistle to the Corinthians, the apostle's green analysis of the Christian summum bonum, the quality which fulfills the whole law. Every morning Dr. Jones read about love; then she spent the rest of the day in expressing it. In his "The Greatest Thing in the World," Henry Drummond points

out that St. Paul reveals the spectrum of love, so to speak, showing that it is composed of several qualities: Patience ("love suffereth long"), kindness ("and is kind"), and so on. According to this analysis, the qualities which make up love are: Patience, kindness, generosity, humility, courtesy, unselfishness, good temper, guilelessness, sincerity. In each and all of these one sees Dr. Clara Jones. Throughout her life she expressed these qualities. For she lived her religion. And her religion was love.

DR. CHARLES S. JORDAN

Asheville, N. C., October 30, 1934.

Dr. Charles S. Jordan died Sunday night, October 28, after a long illness, bravely and uncomplainingly borne. Though removed from active medical life in recent years by reason of physical infirmities, yet so active were the ties which bound him to his colleagues that they wish here to pay this tribute to the man, the physician, and the friend.

Charlie Jordan had a genius for friendship. The smile and personal charm that animated him were truly the index of that warmth of heart and geniality of soul that welcomed all in the bonds of friendship, and bound them there by ties of lasting regard. His passing will be mourned by countless patients who also counted him dear friend and wise counsellor. His loss to those who knew him best in his chosen profession is irreparable; and we wish here to pay tribute to a loyal and devoted member of our Society, whom years ago we honored with the chief gift of our regard, the Presidency of the Buncombe County Medical Society.

To his family, we send the homage of our deep sympathy; and in honor of his memory, we order that a page be set aside in our minutes as a tribute to him, and that a copy of this minute be sent to the local press.

For the Buncombe County Medical Society,
C. H. Cocke,
D. E. Sevier,
C. V. Reynolds.

DR. PAUL PEYTON LANE

By Dr. C. A. Woodard

Dr. Paul Peyton Lane, Wilson, N. C., died suddenly on December 20, 1934, at Waycross, Ga., where he had been recuperating from a recent illness.

Dr. Lane was born in Wilson in 1887. He graduated from the University of North Carolina in 1906, and in 1908 graduated from the Maryland Medical College at Baltimore. For several years Dr. Lane was surgeon in the Atlantic Coast Line Railroad hospital at Waycross, Ga. When the United States entered the World War, he was commissioned as Captain in

the Medical Corps and sent to France. He returned to Wilson at the end of the war and participated in organizing the Carolina General Hospital and served that institution as surgeon for twelve years. For the last three years of his life, he was connected with the Moore-Herring Hospital, Wilson, N. C. He was a Fellow of the American College of Surgeons.

Dr. Lane was a member of the Episcopal Church. He was active in medical and civic societies and was a member of the County Board of Health and trustee of the Mercy Hospital. Surviving Dr. Lane are his widow, who was before her marriage Miss Magdalena Izlar, daughter of Dr. and Mrs. R. P. Izlar of Waycross, Ga.; also two brothers, Dr. Rosser Lane and Mr. Julian Lane, both of Wilson, N. C.

A sincere doctor of medicine, a skillful surgeon, a faithful friend and a good man was the late beloved Paul Peyton Lane.

"Now the laborer's task is over
Now the battle day is past
Now upon the farther shore
Lands the voyager at last.

"Father, in thy gracious keeping
Leave we now thy servant sleeping."

LAST RITES HELD FOR DR. B. F. McMILLAN TUESDAY

Physician Had Practiced in Robeson Since 1882; Ill Two Years

Dr. Benjamin Franklin McMillan, for more than fifty years the physician and family counsellor-friend of the people of and about Red Springs, died at his home here early Monday morning, after an illness of nearly two years.

Funeral services were conducted at the First Presbyterian Church Tuesday morning at eleven o'clock by Dr. C. G. Vardell, assisted by Dr. H. G. Bedinger and Dr. H. C. Hammond. Interment was in Alloway cemetery.

Dr. McMillan is survived by his wife, Mrs. Louanna Purcell McMillan, two daughters and three sons. The daughters are: Mrs. E. M. Renfrow, of Matthews, and Miss Genevieve McMillan, member of the faculty of Flora Macdonald College. His sons are: Dr. Roscoe Drake McMillan, a physician here and immediate past-district governor of Rotary International; B. F. McMillan, Jr., ex-sheriff of Robeson County and druggist of Lumberton, and Z. V. McMillan, an attorney for the HOLC of Greensboro.

Active pall-bearers were: D. M. McMillan, J. H. Townsend, Dr. T. C. Johnson, Dr. W. L. McRae, C. E. Leigh and Duncan McNeill.

Members of the Robeson County Medical Society, the deacons and elders of the First Presbyterian Church of Red Springs; Drs. J. F. High-

smith, Sr., W. P. McKay, W. T. Rainey and W. S. Jordan, of Fayetteville; A. R. McEarchen, of St. Pauls, and J. Frank McKay and H. E. Brewer, of Red Springs, were honorary pall-bearers.

"Doctor Frank," as he was affectionately known, was born near Philadelphus November 8, 1853, the son of John and Mary Smith McMillan. In his early manhood he attended several of the academies that were the only schools of this section and then he and the late Dr. J. Luther McMillan entered the first class of the North Carolina Medical College to be enrolled at the University of North Carolina when that school re-opened its doors after the War Between the States. He graduated from there in 1880. Then he entered the University of Maryland School of Medicine where he was granted a degree in 1882. He returned to Robeson immediately after his graduation and began the practice of his profession which was to extend over a period of more than a half-century.

He first located at Rowland where he remained until 1898, when he removed to Red Springs and practiced with his cousin and former classmate, the late Dr. J. Luther McMillan.

He was a former president of the Robeson County Medical Society. He served a term as president of the Medical Society of the Fifth District and was a member of the North Carolina, Southern and American Medical Associations.

Dr. McMillan was active throughout his life in the work of the Presbyterian Church and for many years was a deacon and later an elder. He was a Mason and a Pythian.

From its foundation Dr. McMillan was a staunch friend of Flora Macdonald College and throughout his life was a generous contributor to its upbuilding and support. He served a number of years as a member of the board of aldermen of the town.

His only other venture into politics was a term in the North Carolina Legislature in 1913, when he sponsored the first laws regulating automobile traffic and restricting persons under 16 years of age from driving motor cars.

A short time before his retirement from the medical profession he was accorded special honors by the medical societies of this district and was presented a cup by them for his unselfish devotion to the profession during his fifty years of active practice.

DR. CLYDE R. NICHOLSON

By T. V. Goode, M.D., Statesville, N. C.

Dr. Clyde R. Nicholson was born in Iredell County, October 25, 1889. He died at the H. F. Long Hospital, Statesville, N. C., April 13, 1935. He was educated in the county schools and the Harmony High School, and graduated in medicine at the North Carolina Medical College in 1912. He passed the State Medical Board the same year and began practice in his

home county at County Line, where he had an enormous country practice in the days of the horse and buggy and bad roads. In 1923 he moved to Statesville and rapidly acquired at large and lucrative practice.

Clyde Nicholson was happiest when doing something for someone else. He was an indulgent father and husband, a loyal friend, and a beloved physician. As I said in the beginning, he had a large and lucrative practice which remained large during these last years, but, in common with everything else, much less remunerative. During this depression he probably did a greater amount of work than ever, with, of course, much less pay and when other men were inclined to curtail their work on this account. In discussing this with him, he told me that these people had paid him when they were working and able to do so and that he could not turn them down now even though it cost him money to attend to their needs. Such was the spirit of the man. These folk whom he had served so nobly during both prosperity and adversity came in droves from every walk of life to pay a last tribute to him as he lay in state. The esteem in which the community held him was attested to by the many beautiful floral offerings. His passing cast a pall over the whole countryside as well as this town.

"Nick," as his friends called him, was a steady citizen, a safe doctor, and withal, a gentleman. His skill and ethical standards were recognized alike by his colleagues and competitors.

Our association with him, either at work or at play, made life more livable, and his fortitude during his last illness was both beautiful and pathetic as we stood helplessly by and watched him go. We all mourn his death, knowing surely that we have lost one of God's noblemen.

JAMES M. PARROTT, M.D.

By Dr. G. M. Cooper

The death of Dr. James M. Parrott, State Health Officer of North Carolina, occurred on Wednesday evening, November 7, 1934. Doctor Parrott had been health officer of North Carolina for a little more than three years. He was so active mentally and so near and dear to his coworkers here at the office that to me, even yet, it seems impossible and unbelievable to think that he is dead. Nearly thirty years ago I "took" the State Board examination for license to practice medicine. He was a member of that board. From then on I looked on him as one of the big men in the medical profession. He held every office within the gift of his profession and loved it and served its interest with a passionate devotion.

He took over the direction of the work of the State Board of Health in one of the darkest hours in the history of the Board. He brought to the affairs of the Board a new kind of leadership, a fresh outlook, a new viewpoint, and a breadth of vision which served notice on the world that the

Board had a resourceful and able executive in charge. Although he came to the Board work without previous experience in an administrative capacity of this type, and knowing little or nothing of the practical workings of a modern public health organization, his chief contribution, which will be duly recorded in the history of this period, to the cause of public health advancement was his stand for the professionalization of public health work.

Before he had been here sixty days, he realized that all department divisions as well as all county health offices should be manned by physicians technically trained and experienced in public health work. It became necessary for him to oppose the ambitions of some of his lifelong friends in the medical profession, which hurt him; but it may be said to his credit that he stood four-square for competently trained men as public health officials.

On assuming office, he realized that he had some very unpleasant duties confronting him in reorganizing the work of the Board. He soon demonstrated that he had convictions and the courage to back them up. When he laid down his armor for the great adventure, he left an organization of his own building functioning at top speed. He proved to his fellow workers here that he was tolerant to everything but laziness and lying and inefficiency: Being a man of clean personal life, and governed in all his actions by a strict sense of honor, he naturally expected such qualities in his staff and other subordinates.

For the past year he struggled against the malady which finally ended his life, and at the same time he felt keenly his official responsibility. He knew all during that last year that, in justice to himself and his family, he should resign and be relieved of the extra tax on his failing strength. On the other hand, he felt that his work was not quite done. He saw many essential features of public health work sacrificed to a program of questionable economy. He did not question the good intentions of the Governor, the Budget Bureau, nor the Legislature, but he felt that the time had come to put an end to the further needless sacrifice of human life for the lack of intelligent preventive efforts. He had a conviction that the incoming General Assembly would see eye to eye with him. He was ready to submit a program of far-reaching importance to the people of the State. It could not be. His big brain is forever inactive. His profound knowledge of the public health needs of the people is left for his successor to acquire for himself.

No man could build for himself a better monument than Doctor Parrott did in the record of worth-while work well done. In his death the State loses an honest public servant, and I lose a warm and understanding friend whose confidence was more precious to me than the riches of Araby.

ERNEST F. POATE, M.D.

By Walter G. McLeod, M.D.

On February 1, 1935, the Moore County Medical Society and the North Carolina Medical Society suffered an irreparable loss in the death of Dr. Ernest M. Poate of Southern Pines, N. C.

Dr. Poate was born of missionary parents in Japan, where he spent his early boyhood and there received part of his preliminary education. He entered Cornell Medical College after returning to the United States, graduating before he reached the age of twenty-one; working with colleagues until he reached the age when he could obtain his medical license, he exhibited great intelligence and versatility.

This outstanding physician further pursued his studies in Columbia University, where he received several degrees such as Ph.D., LL.D., and others; always reticent about his honors, it would be difficult to accurately enumerate them here.

Dr. Poate served with the United States military forces during the World War in the capacity of psychiatrist.

Overcoming almost insurmountable physical difficulties, Dr. Poate made an enviable record in the fields of general medicine, psychiatry literature and law. Psychiatry was his favored branch of medical science. At one time he held a professorship in this subject at Duke University.

In the passing of this man, we, the members of Moore County Medical Society, do realize the loss of a physician and friend who upheld the ethics of his profession to the highest degree. We shall miss his able counsel in legal matters which he so willingly gave. To his family and patients we offer our deepest sympathy and assure them that their loss is hardly greater than ours.

DR. WILLIAM GRAHAM SHAW, Wagram, N. C.

In the death of Dr. William Graham Shaw, I lost a true friend and adviser. He was present when I first saw the light of day. Many times, in later years, his great spirit and faith gave me light when the downward pull was nearly more than I could withstand, and I was slipping into the darkness of discouragement.

The people of Scotland County and North Carolina suffered a loss which cannot be measured. This man had unusual ability as a physician. He possessed a spirit of service which made him the natural leader in the community in which he spent his life. He was not only a great physician but a great citizen who gave his best each day to the service of others. Every movement which led to the betterment of conditions for the people served by him, felt the influence of his support.

T. M. Watson, M.D., Greenville, N. C.

DANIEL EDWARD SEVIER

Daniel Edward Sevier was born in Buncombe County in 1868 into a family whose name is one of the symbols of the pioneer spirit that established the foundation of civilization in the valleys of the Southern Appalachians. He was of the blood of those strong ones who in such spectacular manner at Kings Mountain helped to shape the destiny of our nation. Likewise he was of the blood of a dozen families whose strength and fortitude, unobtrusive, unchronicled and unsung, nevertheless played a major part in the material and spiritual destiny of our own county.

In his life Dr. Sevier was true to type. In youth he fought for an education and advancement against odds unknown to the youth of the present. In the early years of his professional career he pioneered in the field of public health work against the inertia of a prejudice and ignorance happily unknown today; how successfully only the older generation knows.

He served as county health officer for sixteen years and a city health officer of Asheville for eleven years. In these capacities, which claimed the strength of his mature years, his work was outstanding.

He went down fighting the same battle against the forces that menace the public health.

Entirely apart from this his 27 years of health work, general practice entitles him to a full page in the annals of our medical profession.

These are the things that excite our admiration, but there were two things about Dan Sevier that move our heart-strings. They were his loyalty and his friendliness: loyalty to high ideals, to friends and to family; friendliness to those worthy of it and above all to the unworthy.

He served as president of our Society, and much of this is already a matter of record, but the most important of them are merely etched upon the hearts of his friends, therefore, lest in our passing they disappear, let it be resolved that a copy of this tribute be sent to his family and that it be inscribed on a page of our minutes devoted to his memory.

December 13, 1934.

Gaillard S. Tennent,
Paul H. Ringer,
Margery Ward,
Committee.

DOCTOR W. G. SHAW

Doctor W. G. Shaw graduated from the College of Physicians and Surgeons of Baltimore in 1892. For forty years he practiced medicine in Wagram, North Carolina. He was the son of Doctor Daniel Shaw and Mary Eliza Purcell.

In the death of Doctor W. G. Shaw of Wagram on June 11, 1934, Scotland County lost the last outstanding remnant of the school of the "country doctor." He assumed largely the traits of William McClure and

yet he kept fully abreast with modern ideas and newer things. He whispered a song of cheer and gladness as he coursed his way in the path of professional service. He was tender in heart, religious in purpose, and entertained no doubts.

He was a prince in hospitality, a Christian gentleman. He was liberal of thought, seeing good and bad, as shadow and light in a great picture of life painted by the Master Artist. His chief ambition in life was to serve humanity in sickness and distress. His father, a physician before him, gave him the philosophy of experience with which only rare men are blessed. Compensation to him was of secondary consideration.

The sick will miss him. The rich and poor will miss him, since his help and skill was theirs for the asking. He used his skill for mankind's good. And whether white or black mattered not in the least to him. The colored people sincerely mourn his passing and feel that they have lost one of their truest friends. As an old colored woman, on one of the largest farms of Spring Hill Township, said, "We loved Doctor Shaw because he came into our homes and, regardless of poverty or ignorance, he did not scorn us."

Justice, mercy, and humility added to this man's efficiency because they inspired him to do the noblest that was in him. With him there was no pomp or circumstance, nor vulgar display of knowledge, because only the small-minded of limited learning become self-assertive.

He was a friend and a counsellor, and I pause here to acknowledge my gratefulness to him in helping me as a young practitioner. He was the older colleague who told the younger colleague what he knew—not impersonally but as a friend.

As a citizen he was not concerned with problems of human life alone, but with the condition of his community. He gave ungrudgingly of his time and energy to civic improvements pertaining to the community, county, and State. He worked diligently for the advancement of his church. He was never an indifferent or passive voter in the election of county and State officials. In all constructive and civic enterprises he contributed active leadership.

In the last weeks and months of his life there must have come no little satisfaction as he lived over the work he had done and the motif of his life and the ideals which beckoned him on. From voiceless lips of the unreplying dead there comes no word, for he has gone on before us and has entered into the tomorrow of our existence and experience. His memory will linger among us, as we say in the words of Robert Louis Stevenson,

"Home is the sailor, Home from the sea;
And the hunter is home from the hills."

Gibson, N. C., May 1, 1935. J. G. Pate, M.D.

ROBERT BARNARD SLOCUM, A.B., M.D., F.A.C.S., Wilmington, N. C.

By JOHN B. CRANMER

Robert Barnard Slocum, son of John and Ann Slocum, was born in Reading, Pennsylvania, on February 7, 1877. He was educated at the University of New York with the degree of A.B. and was graduated in medicine at John Hopkins University.

Dr. Slocum came to Wilmington in 1906 to accept the superintendency of the James Walker Memorial Hospital. After three years in the hospital he engaged in private practice in Wilmington. He was more interested in surgery than in any other branch of medicine and during the later years of his practice his work was confined to this specialty.

On February 1, 1921, Dr. Slocum retired from private practice to accept a position with the Atlantic Coast Line Railroad Company, as Superintendent of the Relief Department and as Medical Director. He soon won the affection and esteem of all Coast Line employees. He carried on the work in the hospitals of the system at Rocky Mount, N. C., and at Waycross, Georgia, with such efficiency and skill that he brought both of these hospitals up to a Class A rating. He increased the membership of the Relief Department and improved the service to the members. By his unfailing kindness he endeared himself to his patients and by his skill he restored to health and usefulness many men and women.

For many years Dr. Slocum was a member of the Consolidated Boards of Health of New Hanover County; he servide in the Hospital Corps of the United States Army during the Spanish American War. He was a medical member of the Exemption Board during the World War and was surgeon for the Wilmington shipyards during that period.

Dr. Slocum was married on April 6, 1910, to Miss Annie Hill Holmes of Wilmington. Mrs. Slocum and five daughters survive him.

Dr. Slocum died in Johns Hopkins Hospital in Baltimore on November 16, 1934, following a laparotomy. He was interred in Oakdale Cemetery, Wilmington, on November 18, 1934. His loss is keenly felt, not only in his home and by his family to whom he was unusually devoted, but in the community that he had adopted and where he rendered valued service for many years. An excellent practitioner, a good surgeon with sound judgment, and a man of pleasing personality he made many friends who love and honor his memory. A man of highest integrity, a Christian gentleman in every sense of the word, with an abiding faith in the eternal verities it can be truly said of Dr. Slocum that:

"There is no Death; What seems so is transition,
This life of mortal breath
Is but a suburb of the lift elysian
Whose portal we call Death."

DR. CHARLES M. STRONG

Dr. Strong was born in Mecklenburg County, N. C., in 1862 and died at his country home near Charlotte in 1934. His father was a well known country physician in Mecklenburg County, and the son followed in the footsteps of the father. In early life he was interested in the sick and suffering and was in sympathy with their troubles.

He was graduated from the University of Maryland School of Medicine and the College of Physicians and Surgeons of Baltimore in 1888. He settled in the country for some years and in the early nineties removed to Charlotte. Soon after he was elected county physician for some time. He joined the State Medical Society in 1898 and was vice-president in 1907. He was president of Mecklenburg County Medical Society in 1920. During the early nineties the trend began from the home to the hospital for sick people.

In those days the doctors were physicians and surgeons on their prescription blanks and in their practice, but Dr. Strong felt the lure of surgery and the more operating he did the more he liked it. And as the change from the home to the hospital increased, he led the way. Next the School of Nursing opened up and he joined the teaching faculty and did good work along this line so naturally he became a specialist in surgery. From two hospitals there came to be six and he was active in five. He established a clinic of his own which is still progressing under his nephew, Dr. Oren Moore, and Dr. J. L. Ranson. With the coming of the N. C. Medical College he was elected professor and made a splendid teacher and was greatly loved by his students. So his life's work was a great help in spanning the gulf between the operations in the home and those in the hospitals. At his retirement on account of his health he was surgeon-in-chief at the Good Samaritan Hospital, staff surgeon at St. Peter's and the Presbyterian, gynecologist at the Sanatorium and the Mercy. He was a member of the American College of Surgeons, American Medical Association and Honorary Fellow of the State Society. He made frequent visits to the large clinics in this country and made a tour of those abroad.

Among his writings two stand out as showing his forward looking: namely, "20 Years Among Fribroids" and "Frigidity in Women."

To his patients and his friends he was a brother, jovial and kind-hearted.

He is dead but his life lives on.

G. W. Pressly, M. D.,
John E. S. Davidson, M.D.

D. T. TAYLOE, M.D., F.A.C.P., Washington

Dr. D. T. Tayloe, Jr., came from a long line of distinguished physicians. His father, D. T. Tayloe, Sr., was a renowned physician and surgeon, and his reputation was known throughout the whole country. His grandfather Tayloe was also a prominent physician. This background gave

Dr. C. M. Strong
Charlotte

Dr. Dave, Jr., an environment conducive to high ideals and lofty ambitions to be attained in the medical world.

He received his first educational training in the city schools of Washington. Later he attended the Bingham Military Academy at Mebane, N. C., and graduated there in the year 1912. After completing his preparatory work, he entered the University of North Carolina. He became an outstanding athlete and played on the varsity football team for four years and was captain of the team for two years. He was one of the most popular students of his generation. His ability as a football director was recognized by the State press and by leading periodicals over the entire country.

As a University of North Carolina graduate he entered the University of Pennsylvania Medical School, finishing there in 1920. He also completed a year's training at St. Agnes Hospital in Philadelphia. He was an interne in Philadelphia for two more years and he specialized under the famous French surgeon, Dr. Robert L. Leconte, for more than a year. His training was of a most complete nature, and when he came back to his home town to start the practice of medicine and surgery, he was extraordinarily well equipped.

Many honors came to him unsolicited. In early life he had bestowed upon him the degree of F.A.C.S. He was president of the Beaufort County Medical Society. He served on the State Board of Medical Examiners for two years. He was president of the Seaboard Medical Society, member of the Credentials Committee of the American College of Surgeons, as well as chairman of the Executive Committee for North Carolina, for the section of the American College for Surgeons covering North Carolina, South Carolina, and Virginia. He was at one time vice-president of the North Carolina State Medical Society.

Besides being peculiarly fitted for the practice of medicine and surgery, Dr. Dave was endowed with a magnetic personality, and he enjoyed the complete confidence of the public. He possessed so many virtues and lived such a useful life that a whole book could be written about him.

DR. DAVE TAYLOE

Funeral of Beloved Washington Physician Held Yesterday; Many Attend

Washington, N. C., Sept. 15.—Funeral services for Dr. David Thomas Tayloe, beloved physician, age 40, who died at the Tayloe Hospital early Friday morning, were held today from St. Peters Episcopal Church at 2:30. Rev. Stephen Gardner, rector of the church, officiated, assisted by Rev. W. D. McInnis of the Presbyterian Church.

Hundreds of telegrams from all parts of the State and many others have poured into the Tayloe home. Handsome floral tributes practically filled the lower floor of the home. The church was filled and several truck loads were taken direct to the cemetery.

Four stores were closed on Friday and Saturday out of respect to his memory.

Active pallbearers were chosen from local friends and the medical profession from all parts of the State served as honorary pallbearers. The church was filled with relatives and friends long before the services began and as many stood on the outside as were in the church while the services were in progress.

Perhaps one of the greatest honors conferred on Dr. Tayloe was his appointment several years ago on the State Board of Medical Examiners. Another was his membership in the North Carolina Surgical Club. This club, composed of thirteen members, is limited to fifteen. Its membership is based on intensive surgical training and is limited to those who are interested purely in surgery. Its membership is composed of men of contemporary age. Dr. Tayloe is the first member of the club to be lost by death. Practically all of the thirteen were present today.

The town suffered its hardest blow since the death of his father, the late Dr. David Thomas Tayloe, nearly two years ago. Interment was in Oakdale Cemetery.

Doctors attending from various parts of the State were as follows:

Dr. James Rhodes, of Williamston; Dr. Claudius McGowan, of Plymouth; Dr. John B. Bonner, of Aurora; Dr. Green, of Tarboro; Dr. W. T. Ralph, of Belhaven; Dr. Julian Baker, of Tarboro; Dr. Pittman, of Wilson; Dr. C. F. Strosnider and Dr. Donnell Cobb, of Goldsboro; Dr. Joyner, of Farmville; Dr. Howard Combs, of Elizabeth City; Dr. J. E. Smithwick, of Jamesville; Dr. Ben Royall, of Morehead City; Dr. W. N. Thomas, of Roxboro; Dr. Chas. Sawyar, of Windsor; Dr. Ben Lawrence, of Raleigh; Dr. G. H. Raby, of Tarboro; Dr. Daniels, of Oxford; Dr. Sam Schenk, of Shelby; Dr. T. G. Basnight, of Stokes; Dr. K. P. B. Bonner, of Morehead City; Dr. Royal, of Morehead City; Dr. Henry Lyon, of Windsor; Dr. Ross, of Durham; Dr. T. L. Bray, of Plymouth; Dr. H. M. Sweaney, of Durham; Dr. Bahnson Weathers, of Roanoke Rapids; Dr. Ellis Winstead, of Belhaven; Dr. W. D. McNider, of Chapel Hill; Dr. B. C. Willis and Dr. Boyce, of Rocky Mount; Dr. Ross Duncan, of Raleigh; Dr. Ernest Reeves, of Durham; Dr. John Stuart Gaul, of Charlotte; Dr. R. B. McKnight, of Charlotte.

HAROLD JOHNSON WEAVER, M.D.

Dr. Harold Johnson Weaver, age 37, died in a Statesville hospital in January, 1935, death being caused by massive pneumonia.

Dr. Weaver received his medical education at the University of North Carolina and at Jefferson Medical College. He was graduated in the class of 1925. A short time after completing his medical education he established a practice at Brooks Cross Roads in Yadkin County and a few, if any, physicians have established themselves so thoroughly in the hearts of their

patients as did Dr. Weaver. He was beloved by all who knew him and his reputation as an ethical and upright physician had spread for miles around the community in which he lived.

The following resolutions of respect were passed at the April meeting of the Yadkin-Surry Medical Society and bespeak in a small way the love and admiration held for him by his fellow physicians:

Whereas, Almighty God in His Divine Wisdom has seen proper to remove from among us our friend and brother physician, Dr. H. J. Weaver, and

Whereas, the members of the Yadkin-Surry Medical Society realize that they have lost a valuable member; that the medical profession has suffered a great loss; and the State and county has lost a most worthy citizen, now therefore,

Be it resolved that this Society record its great loss; that we mourn the passing of one who was so worthy a member, a member who was so understanding, so sympathetic, coöperative, and tactful, whose work stands out as a monument to his memory, and whose big-brother spirit endeared him to his brother physicians and sealed a bond of friendship among his neighbors, and whose Christian spirit leaves its mark in the community he served so well.

Resolved further, that this Society extend its sympathy to the bereaved family, and that a copy of these resolutions be spread upon the minutes of this Society and a copy mailed to the family.

Resolved further, that this Society in meeting assembled at Yadkinville, this April 2nd, stand for one minute in silent memory to our departed brother.

LORENZO STEPHENSON WEBB, M.D., Creswell, N. C.

By John B. Cranmer, M.D.

Lorenzo Stephenson Webb was the son of the late Edward Webb of Bertie County and Maria Boyle Hardison of Washington County. He was born in Norfolk, Virginia, on August 25, 1874.

Dr. Webb was educated at the Hughes School in Chocowinity, N. C., and was graduated in medicine at the University of North Carolina in May, 1905. He attained a high average in his studies and it was said of him at the time of his graduation that he knew more theoretical medicine than any member of his class.

Dr. Webb practiced medicine successfully in Powellsville, Rich Square and in Lewiston, N. C., for fifteen years after his graduation. Prevented from continuing in active practice by ill health, the greater part of the latter years of his life were spent in the western part of North Carolina.

Dr. Webb had farming interests in Washington County, where his uncle, Dr. William H. Hardison, and his grandfather, Dr. Hardy Hardi-

son, had practiced medicine for more than a hundred consecutive years, and he maintained an office for consultation for a number of years in Creswell, where he sustained the reputation of his uncle and grandfather for kindly efficient service and made a reputation for himself for diagnostic ability.

Literary in his tastes, reserved and retiring in his nature, Dr. Webb lived a quiet life as men's lives go now, but with his kindly sympathetic nature, his high standards of living he will be remembered long and affectionately. He was never married. His devotion to his mother whose death preceded his by a few years, was of an exceptional nature.

Dr. Webb died suddenly in Washington County on October 22, 1934, and he was buried in the cemetery of old St. David's Church where his family had worshipped for many generations.

"Grant him, Lord, eternal rest
With the spirits of the blest."

DR. A. D. PARROTT

Prominent Kinston Surgeon Yields to Heart Attack; Funeral 3:30 Today

Kinston, April 19.—Dr. Albert DeKalb Parrott, 52, widely known surgeon, died at his home here today, victim of a heart attack. Ill some days, his condition was not regarded as serious.

Dr. Parrott was chief surgeon at Parrott Memorial Hospital. He was a member of a family of doctors. Dr. James M. Parrott, State Health Officer who died some months ago, was his uncle. Another uncle is Dr. W. Thomas Parrott, Kinston. A brother is Dr. Mercer Parrott, Kinston. Another brother was Commander Fountain Parrott, ranking American naval officer who lost his life in the World War. Commander Parrott was drowned when a British liner cut his destroyer in two in British waters.

The surgeon was educated at Tulane University and other institutions. He was reared here. He was a member of the American College of Surgeons. He is survived by his widow, Mrs. Mary V. Parrott; a son, John A. Parrott, Kinston; two daughters, Mrs. Sidney Hart, Winston-Salem; and Miss Alberta Parrott, Kinston; his mother, Mrs. Julia Parrott, Kinston; one brother, Dr. Mercer Parrott, and three sisters, Mrs. C. E. Rosemond, Kinston; Mrs. Robert Parker, La Grange, and Mrs. W. P. Maier, Weldon.

Dr. Parrott was keenly interested in aviation. His son was one of the youngest fliers in the country several years ago.

The funeral will be held at 3:30 tomorrow. Many physicians and surgeons will serve as pallbearers, active and honorary.

DR. DAVID M. PRINCE

Laurinburg, April 20.—Funeral services were held here Thursday for Dr. Daniel Malloy Prince, 37, native of Laurinburg, who died April 11 in Mount Vernon, Washington State, where hehas been attached, as a surgeon, to a hospital for several years.

A son of the late Dr. D. M. Prince, widely known Scotland County physician, and the former Miss Irene Marshall, of Charlotte County, Va. He is survived by his mother, his wife, the former Miss Lala Murphy, of Livingston, Montana, an adopted son, two sisters, Mrs. William Page, of Aberdeen, Miss Rockdale Prince, Laurinburg, and three brothers, L. B. Prince, a Hendersonville attorney, Marshall Prince, lieutenant in the army air service, and C. L. Prince, Laurinburg.

The deceased served with a medical unit of the A. E. F. during the World War before graduating from the University of Virginia. He served as surgeon in the hospital in Venezuela, then a hospital in Alaska, finally locating in Washington State.

A large crowd drawn from several states congregated here for the funeral.

. . . Dr. J. R. Young of Anderson, S. C., Past-President South Carolina State Medical Society, and guest speaker, delivered a wonderful address from the subject, "My Experience in 2,200 Cases of Appendicitis." Dr. Young spoke from lantern slides and could not give us a copy of his paper for the Transactions.

MEDICAL ECONOMICS

By Dr. B. J. Lawrence, Raleigh, *Chairman, Committee on Legislation*

(Especially Requested by the Executive Committee)

Mr. President: It affords me a deep and genuine satisfaction to be here and to invite you to think with me for a few brief moments about a matter which is of great importance to the doctors of North Carolina. I want to thank the Executive Committee from the bottom of my heart for the singular honor which it conferred upon me when it ordered and directed me to prepare for your consideration (in connection with my work on the Legislative Committee) some remarks on "Medical Economics." I approached this task with two distinct impulses in my soul—one of hesitation and timidity when I realized my own limited capacity as compared with the magnitude of the subject matter—the other of boldness and conviction as I reflect upon the strength of character, height, the breadth and the depth of the mental capacity of the membership of this Society and upon her proud history.

There are now and there always have been two distinct sides or phases of a doctor's life. The scientific or strictly professional side has been paramounted by almost all physicians, by all medical students and by every teacher of medicine for more than a thousand years. This, I think, will

be admitted by everyone and that it *should* occupy first place is entirely proper and correct. But it is still necessary for nearly all physicians to earn a livelihood for themselves and for those who are dependent upon them, and if we are to command the proper respect and admiration of our fellows and of the public it is imperative that we attend diligently to this second and lesser chapter of our lives.

The physicians of our State are the equal of any in any state in the Union or on the globe. Among our members are to be found great scientists, scholars and statesmen; many of them as individuals are skilled and keen business men, eminently successful when measured by anybody's yardstick, any time. That is our past and present. But we are facing a crisis the like of which we have not seen, nor did those great men of history ever feel such terrific pressure as is being placed upon us this day. We are about to be forced to change our way of living, thinking and acting, both as individuals and as a group. In my judgment the doctors of this State are face to face and breast to breast with one of those critical and historic periods in the lives and affairs of men when one must choose which way his soul shall go. We are, I think, in one of those controversies which arise once in so many centuries. The controversy is between two conceptions of society, one which puts emphasis on a man as an individual, another which puts emphasis on the hive and regards the individual as merely a servant of the hive; on the one side, maximum liberty for the individual, on the other side maximum power for the state; on the one side freedom, on the other side compulsion; on the one side individualism, on the other collectivism. But the controversy is not merely economic and political; it is, or will shortly be, spiritual as well. It is a struggle by rival protagonists to capture the allegiance of men's minds. Soon there will be strife within each man's soul to find for himself which way of life he prefers—whether his instincts, his spirit, his intellect, the whole of his nature is better served and satisfied by individualism or by collectivism. The controversy involves conflicting philosophies about how the individual may best conduct his personal existence. Truly we are about to go to war! It is apparent to all of us that society is already at war with *us* in that it is at war with our way of doing things, at war with the history of our past and all of its traditions, with all of our *ideas* and *ideals*. Let no man be misled any longer—our social fabric is not in sympathy with the things we love. No one would like more than I to continue to draw a purple robe of satisfaction about the shoulders of our profession and continue to say, "all is well." But such is not the case; all is *not* well. I know that a large part of our body politic is not in sympathy with us—it laughs at many of the things we love and literally holds up to scorn much that you and I would hug to our bosoms as sacred balm for our souls, the glorious and hallowed traditions of our fathers! Every man of us is keenly conscious of this very marked change in the attitude of our social structure but we are loath to

believe it. We still speak of it in the secret confines of a committee room and we do not bring it out into the light of day. Perhaps this change in attitude is just as true in many other walks of life, but this is our problem —and if it is to be solved, you and I, or some like us, must do it. Then let us bring it out of the dark into the dazzling light of a noonday sun as bright as that which beats upon a throne. Let us look at it stripped of its subterfuge, baring its poisonous fangs as it rears its hideous head and prepares to strike the deadliest blow that has been dealt our profession in 2,000 years.

What is that monster that has drawn itself so boldly across the path of the economic side of the doctor's life? It has three distinct parts. First —the sociologist, the would be "Social uplift welfare workers or nuisance maker" as is exemplified by the cheap low publicity hound who has to keep up a rapid fire propaganda racket in order to have any job or to find a reason for his very existence at all. Second—a changed attitude in our social fabric—both governmental and individual. Third—and last, is the lack of interest on the part of the rank and file of many physicians, or a lack of knowledge of the seriousness of the situation and a hard-headed refusal to see a fact as it is.

Let us take a look at that boa-constrictor stretched out up at yonder Capitol. The so-called "Epstein Bill." It is the ugliest and most offensive serpent yet to creep from out the underbrush of a so-called "social uplift movement." Those of you who have read it, should meditate on it—and those who have not examined it—should secure a copy at once. Read it carefully and note how this octopus, having already fastened its tenacles upon many departments of state, is at this very moment trying to get a strangle hold upon the throats of the fairest of ten thousand, our beloved profession. What does it propose to do? It has arrayed itself under the name of "The Social Security Bill for Health Insurance," proposed by one Abran Epstein—Epstein, if you please, who is supposed to be the secretary to the "American Association for Social Security." "America! America for me. I want a ship that's homeward bound across the rolling sea to a land that's full of sunshine and a flag that is full of stars." America! the symbol of freedom and truth and light—of individualism and accomplishment. How in the name of high Heaven one could so far forget himself as to drag her fair name into the dust of such a mess is utterly beyond my conception. But there it is. It proposes among other things to create the following:

(1) Workers and other eligible persons would be compelled to pay a stated percentage of their weekly wages,

(2) Their employers would be compelled to pay an amount equal to a stated percentage of the amount paid by them as wages, while

(3) The State would contribute an amount equal to a stated percentage of all wages periodically paid by employers to employees and of premiums paid by voluntary subscribers.

It is my impression that it proposes to set up in the nation's Capitol a lay commission of three members—with State, sub-commissions and so on down to the districts and precincts—and under such a system you and I would be no more than a pawn on a chess board. When I read it something in my soul cried out against it—and I said, "can it be! can it be! Is this our Blessed America? The Lord forbid! And then I shook myself and rubbed the scales from off my eyes and looked again and I saw the Wagner- Lewis "Security Bill," more accurately designated as (U. S. S. B. 1130 H. R. 4120—H. R. 4142). The provision of the Economic Bill relates to three fields of social endeavor.

(1) *Charity.* Within the field are the provisions of the bill for old age assistance, aid to dependent children, and aid to child welfare services.

(2) *Economics.* Within the field of economics lie the provisions of the bill relating to old-age annuities and unemployment compensation.

(3) *Health.* Within the field of health lie the provisions of the bill for aid to state and local health services, for maternal and child health, for the care of crippled children, and for research relating to disease and sanitation.

The Economic Security Bill proposes to encourage the establishment of, and to aid in the support of, in each of the several states:

(1) A state system, federally subsidized, supervised, and controlled of "old-age assistance," under the direction of the Federal Emergency Relief Administration.

(2) A state system, federally subsidized, supervised, and controlled, of "old-age annuities," under the direction of a Social Insurance Board, created for that purpose.

(3) A state system, federally subsidized, supervised, and controlled, of "unemployment compensation," under the direction of the Social Insurance Board created by this bill.

(4) A state system, federally subsidized and controlled, of "aid to dependent children," under the direction of the Federal Emergency Relief Administration.

(5) A state system, federally subsidized, supervised, and controlled, of "maternal and child health" work, including specifically the care of crippled children and aid for child welfare services generally, under direction of the Children's Bureau.

(6) A state system, federally subsidized, supervised, and controlled of local public health activities, under the direction of the United States Public Health Service.

Social Insurance Board. To administer the provisions of the bill relating to old age annuities and unemployment compensation, the bill proposes to create a Social Insurance Board, allocated to the Department of Labor which is presided over by Miss Frances Perkins, Secretary of Labor, who hails from so far North that perhaps she has not learned that anybody

South of the Mason and Dixon Line ever wears shoes. This Board is to be made up of three members, appointed by the President, each to be paid at the rate of $10,000.00 a year. The bill specifies no qualifications for the members of this Board, except that no member shall engage in any other business, vocation or employment.

The Social Insurance Board is not only to administer the provisions of the bill relating to old age annuities and unemployment compensation but is to study and make recommendations as to methods of providing economic security through social insurance, and as to legislation and administration policy concerning old-age insurance, unemployment, compensation, *health insurance,* and related subjects.

Not quite so hideous as the other for this one has no fangs bared. The claws of the monster's foot are withdrawn and he offers a round soft cushion to us as he speaks of public health, charity, economics. Old age pensions and health! What! Yes, health! Within the provision of this bill relatively insignificant, 'tis true, but this is the first step toward doom. No man ever threw himself over a precipice when first he committed sin. But step by step—round by round we go. No we will not launch headlong over-night into state medicine. It is unthinkable—but what happens is a slow and killing change of sentiment. At first it is hardly noticeable—then it grows bolder, until it plants itself squarely in front of us—a veritable lion in our path. What are we to do about it? Perhaps a small group of physicians are interested—they are thinking and talking about the matter. And doing what they can—but the major part of us are not doing anything to stop the incoming tide of state medicine—but like little children on a beach we are playing in the sand—watching one well after another fill or refill, unaware of the oncoming breaker that will surely strangle us. No we are so busy chasing that dollar just a step ahead that we can't stop to take a good look at the chasm of socialized medicine which is opening its powerful jaws and preparing to swallow us bodily in the mad rush for a leveling process by this group of lounge lizards who have just been placed on the relief—and who are now walking about with their thumbs in their vest with chest expanded—literally spouting this social menace and they really think they have a place in the world and that they are necessary. Why they are just about as necessary to us or our welfare as a rattlesnake would be to the comfort of a mouse were the two to be confined in the same cage.

Germany has had its social and health scheme for 50 years. I do not admire Germany. I do not like her even a little bit—but I do admire the ability and integrity of many Germans. Each of us should read Dr. Mark's synopsis of Health Insurance in Germany. She rode this tide which caught the imagination of the public to the everlasting regret of her doctors.

England is reputed to have the best system of national health insurance in Europe. That it will serve, in part at least, as a pattern for prospective health insurance legislation in the United States is admitted so I

underrstand by the present administration. The situation demands therefore, that the American medical profession study the British scheme and evaluate it logically.

It is my impression that 49% of England's physicians engage in this insurance scheme. How are they compensated? Any doctor is permitted to enter. There are no special requirements. He is usually assigned a group of families and he becomes their hireling! He is under the supervision of a sub-boss or political henchman who has been appointed because he can deliver so many votes in a pinch. Any act or word which is considered detrimental to health insurance plan straightway brings down the wrath of the Ministry of Health and out goes the doctor. Let us take a close look at what happens under such a system. A physician must treat any insured individual on his list who requests attention. Private practice respects the doctor's right or refusal to treat. How much is the doctor paid for performing these duties of insurance practice under the British Health Insurance Act? Compensation is fixed by statute. The average annual income from insurance work is $2,250.00. Could any one imagine a more undesirable or miserable condition? We as a profession are headed straight for such a state of affairs if this social uplift-welfare movement is allowed to run unthrottled over us.

Our second concern should deal with the changed attitude, both governmental and individual. Recently a Senator proposed an amendment to a bill under consideration which would have limited the charge for professional service by a doctor to $1.00. One dollar if you please for a highly trained and technical professional service by a physician whose education cost $10,000.00. Imagine this beside $1.10 an hour for an ignorant negro to carry brick and mortar. Put that down by the side of a fee of $15,000.00 which certain members of the great legal profession charged one member of our profession to defend him in court manned by and for lawyers. Compare $3,900.00 charged by a lawyer for representing a child in court with $800.00 paid the physician. The physician had saved her life and labored over her for six months. Those parents paid the $3,900.00 freely, even made a contract for it before any work was done and while they were (by word of mouth) very appreciative of the surgeon's work, nevertheless they thought his fee a little large. A changed or different idea toward value—in one case they have been taught by every member of the legal profession for 500 years that they must pay for legal services—and for 3,000 years we have been telling them "humanity expect us to do it for love—and then wrestle with our financial difficulties." Imagine if you please a so-called business program in the United States that has as its cornerstone a raise in wages that has written into the law of this land a minimum $14.00 a week wage, more than twice what some of them ever received in their lives—that will and did place one in jail for eleven days for pressing a suit of clothes for 35 cents that expects you and me, yes, not only expects us to but asks us to do a complete examination from head

to feet, rectal examination, and X-ray included for the magnificent sum of 50 cents. That is a sample of governmental control. That is what a lay control will do for you and for me if it ever gets its miserable fingers about our throats. And what are we doing about it? Talk about $3.00 or $5.00 dues! We should be paying $50.00 or $100.00 a year right now and we should have an iron-clad Society that is diligently looking after our business interest. We should stop fighting one another and start fighting for each other. Recently a prominent member of the bar said, "Ben, if your profession had done 20 years ago what they are now doing, the things they are now struggling for would have come as a matter of course." Again, in discussing this same thing, an attorney, a Senator if you please, said, "for 200 years coming down from the old English law every one has always understood that the lawyer's fee comes first, the courts have so held," and I said, yes—would to God ours had been as well looked after.

Perhaps this change in attitude or lack of understanding can be further illustrated by a brief resume of some of the experiences had by those of us who have been designated to act as a buffer between our Society and the public. Many months ago our distinguished President suggested that we prepare and present to the General Assembly a compulsory diphtheria bill. An act out of the love of his big heart, designated purely and solely for the protection of little children. Those of us who know Paul McCain know that there is no guile in his soul and that the compassion of his being goes out for those who cannot help themselves. It was not a doctor's bill. It was not for our benefit. It was not intended for the purpose of helping us financially or otherwise. The sole purpose of the bill was to make North Carolina a better place for little children to be born and for them to live. It went to the Committee on Health, we presented the matter, it received a favorable report and went to the floor of the Senate. It excited the opposition of some religious sects and a group who knew nothing about the bill or diphtheria toxoid. The opposition was so strong that it became necessary to send the bill back to the committee. The merits of the matter were again presented to the committee by our President and the Secretary and by the essayist as ably as we could. The committee was so favorably impressed that it again gave us a favorable report. Back to the floor of the Senate the bill journeyed. When it was read, about the first man on his feet to oppose the bill was the distinguished Senator from Durham, stating, "This bill has given me a lot of trouble. About fifteen years ago I had to take some antitoxin and I nearly died and so on." That in spite of the fact that he had been told and every member of that Senate had been told that diphtheria toxoid was not a serum. He is a fine, able Christian gentleman, our finest type of citizen. But he is wholly ignorant of or he does not understand the language of our profession. Next came Senator Powell's amendment exempting conscientious objectors. Then the Senator from Nash sent forward an amendment to limit the charge for professional services to $1.00. Almost immediately Senator Clark sent forward another amend-

ment requiring that the toxoid be administered by the county health officer free of charge to everybody regardless of their position or financial station in life. At this point something inside of me literally boiled and my sense of righteous indignation was aroused because I felt that such an attitude was almost an insult to the integrity and the honesty of the men composing our splendid profession, consequently I was forced to ask that the bill and all its amendments lie upon the table.

The accidents on the highways of North Carolina are increasing rapidly. Cars are built for greater and greater speed. Drivers become more and more reckless. The mortality rate is frightful. More Americans are injured by motor accidents annually than were killed during the World War. In an effort to relieve this situation your committee decided to introduce a measure embodying a driver's license with a financial responsibility clause. This bill was opposed on the grounds that it would take 10 per cent of the motor vehicles off the highways because they are not suitable for traffic. In that instance the State's revenue on gasoline and license tags would be decreased by the same amount. Consequently the bill died in committee. Talk about a lack of understanding and a different point of view from yours and mine! Revenue to legislators is far more important than human life and red blood corpuscles. Another example if you please. HB 769 would have permitted osteopaths to practice medicine without ever having seen a medical college or having passed an examination. The chairman of this committee together with our able President and Secretary went before the Health Committee and presented the matter as strongly as we could. And after a hard fight we were able to get an unfavorable report. Perhaps you will be astonished to learn that a few men otherwise intelligent and some of them educated placed that group alongside the noble men and great oaks that have gone into the making of the medical profession what it is. They dealt in personalities, insinuations and some things that would nearly make one's blood curdle. I am trying to illustrate as forcibly as I can that legislators and the public in general are not in sympathy with us as a profession. In many instances they do not believe that it is possible for us as a group of men to render any service because of the love for humanity. They do not want to hear about the enormous amount of charity work that we are doing. They care very little or nothing about the forgotten man whose wounds and broken body we must bind up. I believe that we should continue to render that service. I beg of you not to misunderstand me. I would not for a moment have any man, woman or child suffer for the lack of attention. But what I am pleading for is that we may have the proper awakening of our doctors to the fact that we must attend diligently to that second chapter of our lives, namely the economic side, and that we must provide for self preservation as a group or we shall perish.

With the above thought in view your committee caused to be introduced into the Legislature House Bill 148 which provided for a lien in

favor of hospitals and doctors in case of pauper accident damage suits, when as and if such pauper cases come into the possession of funds. It was interesting to witness the progress of that bill on its journey from the hopper to the engrossing clerk's office. First it had to meet the approval of the great legal profession. And their first and their last thought was as it always is "there must be nothing in the bill or any bill which will interfere with the lawyer or his fee." The very first thing your chairman had to do was to satisfy them that nothing in that bill placed the doctor or the hospital ahead of the lawyer. The Supreme Court of North Carolina, as was ably presented to the committee, has already held that a lawyer's claim comes first and that perhaps it reaches to the second or third party. And yet we had to put in a provision that these gentlemen of the bar would specifically come first and that they be notified ahead of time about the amount of the bill and the details of it. This bill had to pass Judiciary Number Two, in the House, and the Senate twice. That is to say, it had to pass the committee four times. However, with all of that I stand here and assert that the lien bill was the longest step forward that we have taken in 50 years regarding medical economics in North Carolina. It is my belief that it is the first bill ever enacted into law in this State giving doctors a preference. It took long hours and strenuous effort, seasoned with much persuasion, and all of the diplomacy which we could command, to get even this little relief. Such a state of affairs ought not to exist. But this is a lawyers' country. Every legislature is a lawyers' legislature and every congress is a lawyers' congress. I am not attacking them. They challenge my admiration. They have looked after their interest. And with Paul they can say, "this one thing I have done." The fault and blame is with us. Our profession could have been and yet can be as well protected and as amply cared for if we will do it. Few of us ever realize what a tremendous weapon we have at our command should it ever become necessary for us to use it. What are some of the things we can and must do in order to relieve this situation? We need a closely knit—tightly woven organization—one in deed and in truth, not merely in name. One that has power and which exerts influence and does it constantly—in season and out. We need twenty to thirty physicians in the House and fifteen in the Senate. That is easy and can be done. Perhaps our most crying need at the moment is a whole-time Secretary with an adequate salary and expenses to visit county societies and county groups, even out in the most isolated rural sections, keeping down strife, smoothing out rough places—equalizing differences of opinion, building fences around the profession. In Raleigh constantly during the Legislature. In touch with Washington frequently, we need it as never before. We should ask our distinguished Secretary to fill this place. He needs no eulogy from me. His work is an everlasting monument to him. For he has done more for organized medicine in North Carolina and he has worked harder for the protection of the doctors' interests than any man in our profession today. We should uphold

his hands and support his efforts. We cannot over-estimate the value of his constant thought. His warm, genuine love for his profession and the influence of his guiding hand during these trying years will live after his couch has been folded about him.

This social parasite—this desire for a leveling process is literally infesting this country. Alarmingly true it is that the daily press is full of it; the magazines are carrying it; the very air we breathe and live in is charged with it! It is discussed on the street corner; it is expressed or insinuated in almost every public speech or lecture. Every time one turns on a radio it is there. Till one is led to feel "If I take the wings of the morning and fly to the uttermost parts of the earth, lo, it is there." We may as well face the fact, for forewarned is forearmed, and as I live, and by the eternal powers that be, if we do not hang together, we will hang separately.

Let this be our slogan, "Organized medicine indeed and in truth—a solid phalanx, one in union—indivisible and locked together." Away with discord, either state or local, enough of petty jealousy. Let us have a Society of and for doctors, with a unity as solid as a rock, as deep as the sea and as high as the Heaven itself. This takes time, effort, and it will take study and hard work. It cannot be done in a day or a night. We come here in a hurry, and most of us are in a hurry. One day we shall come to realize that it is time for us to stay here and to endeavor to know each other and to lend our strength each to the other. We must come to realize that we must stay until it is done. We must mould every one of us into one group. "For 'tis the law of the jungle, As old and as true as the sky, And the wolf that would keep it must prosper, And the wolf that would break it must die. As the creeper that girdles the tree-trunk, The law runneth forward and back; For the strength of the pack is the wolf, And the strength of the wolf is the pack."

North Carolina was once a *rural* district, there were few doctors, sparsely settled, and they rarely saw each other. They fought well, but as individuals, they were not only doctors and scholars, statesmen, but frequently had to be ministers and counsellors as well. Truly they were pioneers. It was that rugged life that of necessity gave us the foundation upon which has been builded the character and integrity of the North Carolina State Medical Society. It was that same fertile soil which gave us a Thomas Wood, a Richard Lewis, the O'Hagons, the lovable Tom and Albert Anderson, the fluent Chas. Laughinghouse, the Tayloes, (Jr. and Sr.), the knightly Cy Thompson, the scholarly and distinguished Haywoods, and more recently the eloquent Jim Parrott, and our beloved McBrayer, Highsmith, Royster and many others. When I call such a roll as that I feel like taking off my shoes for almost "thou art on Holy Ground." Many of them have passed over the River to a rich reward. While they wrought they sent the tap root of their life into the clay of character—the anchor roots into the subsoil of intelligence and the feed

roots into the soil of love, and the fruit of their tree was service and success. They threw themselves upon the wheels of service and often it broke them. They fell to pieces but arose transformed and walked across the stage of life arrayed in royal splendor of great men and slipped behind the curtain with a smile and a satisfaction in their souls. Their mantle is now upon your shoulders and mine. They builded well a bridge and then went out to sea. What shall we do?

Providence has placed us here. We find ourselves near quicksand. This socialistic welfare propaganda has thrown our profession literally into the swirl of a raging torrent; we are at this very hour already in the rapids and we are rushing toward the falls. We must construct a foundation and build a bridge over which tomorrow's youth may pass. No nation has built enduringly without its children as its prime consideration.

"An old man, going the lone highway, came in the evening cold and grey to a chasm,—vast and deep and wide. The old man crossed in the twilight dim. The sullen stream had no fears for him. But he paused when he reached the other side and built a bridge to span the tide. "Old man," said a fellow traveller near, "you are wasting your strength with building here. Your journey will end with the closing day. You never again will pass this way; you have crossed the chasm deep and wide, why build you this bridge at eventide? The traveller lifted his old gray head, "On the road that I have come," he said, "there followeth after me today a youth, whose feet must pass this way. He, too, must cross in the twilight dim: Good friend, I am building this bridge for him." As Napoleon said, "The centuries are looking down upon us, but, more important still, generations yet unborn may succeed or fail because of the stand we take in this crisis. Let us rise and quit ourselves like men."

PNEUMOTHORAX TREATMENT OF LOBAR PNEUMONIA

By Dr. L. A. Crowell, Jr., Lincolnton

Pneumothorax was first given for lobar pneumonia by Friedmann in 1921. Before using it, he had observed that two infants immediately got well, by crisis, following a spontaneous pneumothorax on the involved side.

Of one hundred and fourteen total cases that I know about, twelve (12) have died, a mortality of 10.5%. In only one of these cases could death in any way be attributed to the method itself.

The treatment should be begun as soon as the diagnosis has been made. It consists of the injection of sterile air into the pleural space for the purpose of separating the lung from the chest wall and bringing about a partial lung collapse.

Considerable experience with the technique of air injection is essential before using pneumothorax to treat lobar pneumonia. The first injection is the hardest to give. The pleural space is sometimes hard to find, and

among other things, there is some danger of puncturing the pneumonic lung, especially if there are adhesions. Sudden lung collapse or empyema could follow such an accident.

In an average sized man, from 300 to 500 c.c. should be given at the first injection. Since air is absorbed from the pleural space very rapidly in this condition, a second injection of from 400 to 600 c.c. should be made sixteen to twenty-four hours later. Thereafter the number of injections and the amount injected are determined entirely by the course of the disease. Even for the first and second injections it is not possible to lay down arbitrary rules. For example, the amount of air which can be taken by one patient with ease, may, in another patient of the same size, produce signs of cardiac embarrassment. Also, pleural adhesions, existing prior to the onset of the pneumonia, or resulting from it, may prevent pulmonary compression or greatly limit the amount of air that may be injected.

Experience has shown that total collapse of the lung is neither necessary or desirable. To obtain optimum results it seems necessary only to get the lung away from the chest wall and, by refills, to keep it away until resolution is well under way. Some say that forty-eight hours is sufficient time for this.

I consider it essential to take frequent X-ray pictures of the chest during the treatment. In my cases I have made chest films before and after each injection and sometimes more often, in addition to frequent fluoroscopy. This enables the operator to know at all times the condition of both lungs, the degree of lung collapse, the position of the mediastinum, the presence and extent of cardiac compression, if any, the amount of mediastinal respiratory shift, or the presence of adhesions.

This treatment is endorsed by all who have used it, but is by no one recommended as a panacea for lobar pneumonia. Every case must be individualized. One very attractive feature of the treatment is that it may be used without moving or disturbing the patient. If a portable X-ray machine is available, the treatment can be given in any home which has electricity.

In the ideal case, a crisis follows within twenty-four hours after the initial injection. There is a typical sudden fall in temperature, pulse rate and respiration; the patient usually perspires freely, and feels considerably better. The white blood count at first slightly rises, then suddenly drops. The cyanosis and pain disappear, etc. In short, a pneumothorax crisis is identical of a typical lobar pneumonia crisis, well known to all of you.

A valuable feature of this treatment is the immediate relief of pleuritic pain, which occurs during the first treatment, after only 50 to 100 c.c of air have been injected. It is easy to understand how this can occur, since the separation of the visceral and parietal pleurae by a layer of air between them, prevents their rubbing against each other during respiration, and therefore prevents the pleuritic pain. The relief from this pain alone justifies the treatment.

Why does pneumothorax initiates a series of changes indistinguishable from a normal crisis? First; it partially immobilizes and rest the lung; second; it lessens circulations of blood through the lung; third; it diminishes lymphatic absorption from the lung; and, fourth; it aids in the expulsion of bronchial plugs.

Certainly, the absorption of poison from the diseased lung suddenly diminishes immediately after the institution of this treatment. The lung is splinted, as it were, and impediments to processes of repair seem largely to be removed.

Coghlan proved by experiments on humans, that the pneumothorax is responsible for the crisis. He produced crisis by pulmonary compression, and then allowed the lung to re-expand. When the lung had again come in contact with the chest wall all of the original symptoms reappeared with the same severity. When the lung was again collapsed, the symptoms again disappeared as they had after the first injection.

I have been using this treatment since April, 1934. I believe it is voluable only in uncomplicated, unilateral lobar pneumonia. I am using the method with an open mind, and I believe it has great value as an adjunct to our treatment of this disease. Anything which will help us combat lobar pneumonia should be welcomed, since, with the exception of the serum treatment of type one lobar pneumonia, we can do little more with this disease than Hippocrates could 2,300 years ago.

What are the objections which might possible be raised against this treatment:

First: *Cardiac Embarrassment:* Experiments on dogs and serial X-ray films on human beings have demonstrated that in most cases of lobar pneumonia there is an actual decrease in lung volume, due to atelectasis. This being the case, the negative pressure in the pleural cavity before the injection is greater than normal. Therefore, some of the injected air serves to bring the negative pressure down to normal. Certainly there can be no danger in this from the standpoint of cardiac embarrassment. Furthermore, care is taken to keep the pressure well on the negative side. In cases in which evidence of cardiac embarrassment does appear, the air can be withdrawn from the pleural cavity just as easily as it was injected.

Second: *Pleural Effusion:* Air in the pleural cavity is a foreign substance and as such irritates the pleural surfaces to some extent. Some people are more susceptible to air irritation than others. Between 60 and 75% of all patients receiving pneumothorax for pulmonary tuberculosis eventually develop fluid. Practically all cases of lobar pneumonia have more or less pleural effusion. This is due, in large part, to the rubbing of the diseased and roughened visceral pleura against the parietal pleura, and it is reasonable to assume, I think, that with this rubbing eliminated by the separation of the two membranes, the effusion is less apt to occur.

THIRD: *Empyema:* There are three possible ways in which pneumothorax treatment of lobar pneumonia may cause empyema. First, organisms may be carried in from the outside. Good aseptic technique will prevent this. Second, puncturing of the lung by poor operative technique. This is very unlikely to happen in experienced hands except in the presence of adhesions. Third, empyema may result from a post-pneumonic pleural effusion in the same manner as it does in lobar pneumonia not treated by pneumothorax. If you agree with the conclusion drawn in the preceding paragraph that effusion is less apt to develop in the pneumothorax treated case, then it follows that empyema, by this mechanism, is less apt to follow pneumonia treated by pneumothorax than pneumonia not treated by pneumothorax.

FOURTH: *Pleural Shock and Air Embolism:* I see no reason why these complications would be more likely to occur in pneumonia than in pulmonary tuberculosis, and certainly, the likelihood of their occurring does not prohibit the pneumothorax treatment of tuberculosis.

FIFTH: *Development of Pneumonia in the Opposite Lung:* In case this complication should occur the air around the lung originally involved can be withdrawn as easily as it was injected, by inserting the needle into the air containing pleural space and reversing the operation of the pneumothorax machine as mentioned above. With the originally involved lung thus re-expanded, the patient certainly has the same chance of recovering as he would have had if pneumothorax had never been used, and possibly a better chance, because of the "breathing spell," so to speak, or relief, which the original pneumothorax gave the body from the onslaught of the infection in the first involved lung.

SIXTH: *Pleural Adhesions:* This condition presents an effective barrier against this form of treatment. The adhesions may be old, from previous pleural disease, or fresh ones, caused by the present illness. If fresh, frequently pneumothorax will separate them gradually. The latter is especially apt to be true in case pneumothorax is attempted under the first week. The success of pneumothorax is proportional to the extent to which the visceral pleura can be separated from the chest wall. As stated above, total collapse is not essential for optimum results. In two of my cases pleural adhesions have prevented collapse of the involved portion of the lung. In one of these cases, an upper lobe infection, I was unable to get the diseased upper lobe away from the chest wall, but did collapse the lower lobe, which indirectly produced slight collapse of the involved upper lobe, with slight benefit. In the other case there was a rather broad adhesion in the axillary line which prevented a satisfactory collapse but the patient received strikingly beneficial results from the treatment, although the beneficial results were delayed longer than in those cases in which immediate, complete separation of the pleurae could be effected.

CASE REPORTS

No 1.—Negro girl, 8 years old, admitted April 14, 1934, at 12:30 P. M., on the fifth day of a typical lobar pneumonia involving the two lower right lobes.

On admission, the temperature was 102.6, the pulse 106, respiration 60 and the white blood count 23,200.

At 3:30 P. M., April 14, 175 c.c. of air were injected into the right pleural space. Before 50 c.c. had been injected, the pain was relieved suddenly and completely and never recurred. She went to sleep at 4:45 and slept for 40 minutes, the first sleep in 120 hours.

Twenty-four hours after the treatment was begun, the temperature was 98.8, the pulse 100 and respiration 46. At 9:00 A. M. of April 15 she was given 175 c.c. of air and at 10:40 A. M. of April 17, 155 c.c. Twenty-one hours after the first injection, the temperature curve crossed the normal line, and remained within normal limits during the remainder of her stay in the hospital.

The white blood count dropped rapidly. On the sixth day after admission (April 20) it went below 7,000 and remained below that from then on.

The collapse was quite satisfactory during the entire period. The lung was kept about one inch away from the chest wall until it had cleared up, as shown in the roentgenogram.

No. 2—White boy, 9 years of age, admitted on April 26, 1934, on the first day of a typical lobar pneumonia involving the two lower right lobes.

On admission at 6:00 P. M. of April 26, the temperature was 106, pulse 122, respiration 36 and white blood count 20,000.

At 6:15 P. M. 180 c.c. of air were injected into the right pleural space. As in the first case, no difficulty was experienced in finding the space. The pain was completely relieved after about 30 c.c. of air had entered. In 48 hours, the temperature was 98.8. The temperature continued under 99.8 until the fourth day after admission when he had an attack of German measles which lasted three days. On May 2, the temperature had again returned to normal and continued within normal limits until discharge.

A second injection, one of 200 c.c., was given on April 27 at 8:05 A. M., fourteen hours after the first treatment. 200 c.c. was injected at 8:45 A. M. of April 28, and 100 c.c. at 10:05 A. M. of May 1.

At no time was the lung allowed to come again in contact with the chest wall until resolution was complete.

The blood count dropped rapidly. The patient began sitting up on May 5 and was discharged on May 9.

No. 3—White boy, 19 months old, admitted on May 12, 1934. The illness began on May 5 with high fever, drowsiness, nausea, vomiting and

coughing. The diagnosis of lobar pneumonia, involving the upper right lobe, was made on May 9, following which the baby got steadily worse.

On admission, the temperature was 103.2, the pulse 152, respiration 38 and the white blood count 23,600. The abdomen was greatly distended, which distension frequent enemas, stupes and purgatives prior to admission had not relieved.

At 3:00 P. M. of May 12, 75 c.c. of air were injected into the right pleural space. There was some relief from pain at once, but not the complete relief observed in the first two cases. X-ray showed that the upper involved lobe was not collapsed, but that the lower uninvolved lobe was collapsed.

During the remainder of the afternoon and night, the patient perspired freely and had several large defecations following a soapsuds enema. Much gas was expelled and the distension was much relieved.

On May 13, 90 c.c. of air were injected into the right pleural space. An X-ray picture made following this injection showed the lower right lobe collapsed a little more, but the upper right lobe still stuck fast to the chest wall.

On May 15, the patient suddenly developed bilateral otitis media. The temperature which, after the air injections, had come down some, again shot up. Both ear drums were lanced and considerable pus evacuated from each middle ear cavity, following which the temperature again fell some.

Pneumothorax treatment was abandoned because of the inability to get compression of the diseased lobe. We possibly could have obtained this by giving the air under positive pressure, but we were unwilling to do this.

The patient got well slowly by lysis, with eventual complete recovery in about eleven weeks.

No. 4—H. W., white girl, aged six, admitted to the Lincoln Hospital on December 30, 1934, at 11:30 A. M., on fourth day of lobar pneumonia involving middle right and lower half of the upper right lobe. Temperature 102.8, pulse 120, respiration 28, white blood count 11,000. The left side was negative to physical examination and X-ray.

The first air injection of 250 c.c. was given at 12:30 P. M. of December 30—no difficulty in getting into the pleural space. The pleuritic pain was relieved immediately. A good collapse was secured. The temperature immediately dropped a degree and a half and patient went to sleep. The next morning the temperature began to rise again. Physical signs of fluid appeared just before noon on December 31, and the patient became more dyspneic, cyanotic and restless. At 4:00 P. M. of December 31, 200 c.c. of turbid, straw colored fluid was withdrawn from the right pleural space, which relieved the dyspnea and cyanosis considerably. The temperature dropped and the patient went to sleep. Her temperature remained between 99.5 and 101 until January 2, 1935, when her condition became definitely worse. At this time, physical examination revealed evidence of pneumonia

in the left hilum. This spread and there was a rising pulse rate and respiration and increase in cyanosis and dyspnea until death occurred at 7:35 P. M. on January 2, 1935.

I believe the spread of the pneumonia to the opposite lung was responsible for her death, together with her low leucocytic response.

No. 5—E. S., colored man, aged 39, admitted to the Shelby Hospital on March 7, 1935, with pneumonia of lower right lobe of five days' standing.

On admission the temperature was 101, pulse 120, respiration 34 and blood pressure 128/25. He was short of breath, coughing profusely, expectorating blood-tinged sputum, and complaining of severe, sharp pains in right chest. He was given 550 c.c of air into the right pleural space. After 100 c.c. had gone in, the pain was completely relieved. Within half an hour the patient had a large bowel movement, relieving a considerable distension which he had on admission. The next morning, the temperature crossed the normal line and remained below 99 from then on until his discharge from the hospital. Six hundred fifty c.c. of sterile air were injected on March 8, 1935, at 3:30 P. M.—the day after admission. The pain which had reappeared at noon on March 8, was again entirely relieved. There was slight dyspnea for fifteen minutes following this injection. Examination revealed a broad adhesion in the axillary line extending from about the fifth and seventh ribs. On March 9, 1935, at 7:00 P. M., 550 c.c. of sterile air were injected at the same site. The patient became very hot and short of breath and 200 c.c. had to be withdrawn. On March 11, 1935, the final injection of 600 c.c. was made, with no untoward symptoms. During this time the X-ray pictures showed progressive diminution in the pneumonic process. The white blood count, during the entire stay in the hospital, remained fairly constant, ranging between 13,000 and 20,000. This was in contrast to the other cases, in which this method of treatment has been used, in that the blood count usually rapidly dropped after the induction of pneumothorax.

The patient made a complete recovery.

THE PREVENTION, FORMATION, AND DISINTEGRATION OF URINARY CALCULI

Case Report of Rapid Bilateral Stone Formation Following Injury

By The Crowell Clinic

As far back as medical history goes we find records of stones and cutting for stone. You all will recall that the Hippocratic Oath contains a pledge against cutting for stone. Various explanations have been made for the inclusion of this pledge. It could not have been because The Father of Medicine recognized medicine and surgery as different arts to be

separated in practice; for his writings deal largely with fractures and other surgical problems.

It may have been because of the ill repute of the operation in the hands of itinerant cutters for stone. It is, perhaps, reasonable to suppose that Hippocrates forbade his disciples performing this operation because he knew that some stones dissolved of themselves and soon became quiescent, and that he regarded the chances of the afflicted ones as better, on the whole, without operation.

It may be worth recalling that a King of France who suffered from stone gave a prisoner his freedom in consideration of his being subjected to the usual cutting, and though the operation did not prove fatal, the king declined to be subjected to it; also that old Samuel Pepys left us, in his intimate, candid and scandalous diary, a rather detailed account of his own operation and recovery, and of how he gathered a company of friends on each succeeding anniversary of the great day and, amidst feasting and rejoicing, told them how he suffered and was strong.

For thousands of years cutting was the sole method of relief, except for small gravels passed spontaneously. In the last century some stones were crushed with special instruments and removed. All this refers to bladder stone. Today this is done under vision.

In the last few decades of the century just past, a few stones were removed from the bladder through the widely distended short female urethra.

Between 1900 and 1915 a surgeon here and there removed from the lower ureter one or more stones by way of the bladder and urethra. It was in 1915 that the writer began the advocacy of the removal of stones from any segment of the ureter by ureteral anesthesia and dilatation, which has caused our clinic to be generally credited with having popularized the method. In 1921 the first extended report was made by the Crowell Clinic; this covered the removal of stones from all parts of the ureter in 88 individuals; in only seven cases had we found it necessary to use other methods of removal. Since 1915, 709 persons with ureteral calculi have been treated and the stones recovered in this way in our clinic.

We were gratified to regard removal of stones through the natural channels as a great gain to those afflicted with stone; but we were not content to stop there. Might it not be that some means could be worked out of dissolving stones? Of preventing the recurrences which are prone to occur? Even of preventing stone formation in the first instance?

We advocated pelvic lavage to prevent recurrences as far back as 1918. Since 1924 we have, in all cases, following the removal of stone, administered sodium acid phosphate and urotropin. This was given to clear up infection. We thought infection and stasis were probably the joint causes of stone formation. Sodium acid phosphate causes the urine to be acid in reaction.

If we had known about the vitamin A deficiency and had given an acid-ash diet we might have prevented the recurrence of stone. It was noticeable that patients who continued the use of sodium acid phosphate and urotropin seldom had recurrence of stone.

In 1924 we reported and demonstrated the disintegration of bilateral renal cystin calculi by pelvic lavage and diet regulation. In so far as we are able to ascertain this was the first demonstration of the disintegration of any kind of urinary calculus. Since this paper has been in preparation, Keyser of Roanoke has generously said of this work: "To Crowell is acknowledged the distinction of first dissolving urinary calculi by purposive therapeutic means."

We have never given up the belief that diet has much to do with the formation and disintegration of urinary calculi of whatever composition, even though there is much in the evidence that is unexplained and much that seems to be contradictory.

Urinary calculus formation has been called a poor man's disease. This conception would be hardly reconcilable with certain facts as to geographical and racial distribution. According to Rodman, the Negro is only one-fifth as liable to the condition as is the Caucasian. In the United States it is most frequent in Kentucky, Tennessee, Ohio, Missouri, North and South Carolina, Virginia and Georgia; while Alabama, Mississippi, Arkansas, Louisiana, and the New England states are relatively exempt. Rodman says, further, that stone is common in France, Austria, Hungary and Russia, while it is but seldom seen in Spain and Switzerland.

Holms and Copeland, through questionnaires (to urologists) throughout the United States, found urinary calculi to be more prevalent in southern Florida and southern California than in any other locality in the United States.

To prevent stone formation and reformation further knowledge of the etiological factors involved in the different types of stone is highly desirable, if not absolutely necessary.

Dr. Higgins of the Cleveland Clinic and others have added to our conviction that diet is an important factor in stone formation.

It has long been known that infection is almost always found as a complication of urinary calculi and that infection predisposes to the formation of certain calculi; but not until recently has it been shown that diet deficient in certain ingredients will favor infection and produce urinary calculi.

Higgins found three constant changes that might be associated with calculus formation, namely: Keratinization of the epithelium of the genito-urinary tract, urinary infection and alkalinuria. He says keratinization is produced in mice fed on a diet deficient in vitamin A for from 8 to 10 weeks. Mori reported similar observations and Blackfan and Wolbach found the same condition in 11 autopsies on children maintained

on a diet deficient in vitamin A. Higgins also observed that bladder infection occurred in these mice usually in 30 days and renal infection in 60 to 90 days, and that when the experiment had lasted for a period of 250 days, 85 per cent of the experimental animals had vesical calculi and 42 per cent renal calculi. The urine of these mice was constantly alkaline, a condition predisposing to infection and urinary calculi.

Dr. Jno. K. Ormond reported a series of experiments carried out at the Ford Hospital, Detroit, on albino mice in which 334 were fed on a diet deficient in vitamin A and stone formation occurred in 98. They had previously examined post-mortem 800 fed on normal diet without finding stone formation in a single case.

Keyser, who has given much study and thought to the etiology of urinary calculus formation, does not agree with Higgins. He emphasizes the "inadequacy of the colloidal mechanism to maintain either solution or deposition of isolated crystals. In consequence fusing clusters of coalescent spheroidal crystals are precipitated and stone formation takes place." He is of the opinion that experimental evidence is now sufficiently correlated with clinical data to justify the acceptance of at least two theories of stone formation: first, metabolic hyperexcretion of crystalloids, and second, infection with biologically specific stone-forming bacteria. He agrees that infection is associated with stone formation, which we all believe is practically always present, but fails to establish by experiment the metabolic hyperexcretion of crystalloids. He reports three cases of urinary calculi with alkaline urine in which the urine became acid and the stone shadows disappeared under an acid-ash, high vitamin A diet, and pelvic lavage with a 2% malic acid solution.

Dr. O. S. Lowsley reports a case in which seven operations had been performed for the removal of kidney stone and following changing the urine from alkaline to acid and so maintaining it, there has been no recurrence in the past eight years.

Higgins has shown beyond the shadow of a doubt that urinary calculi can be produced in mice by maintaining them on a diet deficient in vitamin A, and he has brought about their disintegration by substituting a high vitamin A diet. Whether or not this can be accomplished in man, we cannot speak dogmatically.

In a recent letter Higgins reports as follows:

"At the Clinical Society of Genito-Urinary Surgeons here, I reported twenty-two cases of urinary calculi all of which were in the kidney (and all) which had completely disappeared under the high vitamin A acid-ash diet."

He has since found two other cases and again he says:

"I have now a collected series of twenty-five cases in which the stones have undergone solution."

"I have a second series of twenty-one doctors who pass stones at frequent intervals. That is, they have passed small calculi every five or six days. The composition of these stones was calcium phosphate, mixtures of calcium phosphate and carbonate, and uric acid. They have been completely relieved of their symptoms for over a period of eighteen months."

"We are very enthusiastic also on the use of this regimen following operation for stones on the urinary tract. In the past two and one-half years, we have had only one recurrent stone, and in this instance the patient did not follow the diet."

Again he says, "At the present time, I am treating the following group of patients with dietary regimen:

"1. Those in which there are bilateral urinary calculi, and operation is not deemed advisable.

"2. A small stone in the calyx not producing obstruction.

"3. A small stone in the pelvis not producing obstruction.

"4. A group of patients who have passed stones at frequent intervals, but in whom a large stone is not demonstrated in the upper urinary tract.

"5. Those in which operation for the removal of urinary calculi has already been performed, to prevent recurrence of stones.

"6. Those in which the patient refuses operation.

"7. Orthopedic cases with osteomyelitis or fractures, who are required to lie in a recumbent position for a long period of time, as in this group we know a certain percentage do develop calculi."

Of course, no one would submit to experimentation to produce urinary calculi, but all would gladly submit to dietary measures for their solution, certainly in preference to undergoing surgical operation.

Experimentally and clinically, it has been proven that urinary calculi can be produced and dissolved in animals and that disintegration can be brought about in man.

Case Report.

Conclusion.

SECOND GENERAL SESSION

Tuesday Evening Session, May 7, 1935

The Second General Session convened as a dinner meeting in the main dining room of the Carolina at 7:00 P. M.

Dr. Oren Moore, Charlotte, was the delightful, not to say charming, toastmaster. During the dinner music was furnished by the Carolina orchestra, composed of North Carolina men—a delightful group of men and they furnished the most lovely music one is privileged to hear.

A quartette, composed of Rev. and Mrs. A. J. McElway of Pinehurst and Rev. and Mrs. A. V. Gibson of Sanford, then rendered a couple of numbers to the delight of the large number present.

The toastmaster then introduced Mr. Julian Miller, Ph.D., editor of the *Charlotte Observer*, who delivered the address of the evening. As is his want, he held the rapt attention of the great audience as words of wisdom, punctuated with an occasional satire, fell from his lips. This address was a mental feast suited to the times and conditions in which we live.

Next came greetings from the Woman's Auxiliary by their President, Mrs. J. Buren Sidbury of Wilmington.

(The secretary regrets that he could not have a reporter to take these addresses and the speakers could not furnish them.)

Following the adjournment of this Second General Session, a largely attended reception was held for the President in the ball room, followed by the Thirteenth Annual Medical Society ball.

THIRD GENERAL SESSION

WEDNESDAY, MAY 8, 9 A. M.

The Third General Session was called to order by the President, Dr. P. P. McCain, and the following program was had.

SURGICAL TREATMENT OF NON-COLLAPSIBLE CAVITIES

RUSSELL O. LYDAY, M.D., F.A.C.S., Greensboro, N. C.

As a preface to my remarks on the surgical treatment of this type of cavities, which are chiefly encountered in the chest, I wish to apologize for being so ambitious in the selection of such a broad subject. My discussion of this phase of surgery is from the standpoint of one doing general surgery, not attempting to treat it in as thorough and illuminating a manner as one who specializes in thoracic surgery.

The conditions requiring surgical treatment, which I shall consider are: (1) Empyema: (a) Treatment of Acute Empyema, (b) Treatment of Chronic Empyema, (2) Cavitation in Pulmonary Tuberculosis: (a) Treatment by Phrenecectomy, (b) Pneumolysis, (c) Thoracoplasty.

ACUTE EMPYEMA

Acute empyema occurs almost twice as frequently in children as in adults. As is well known, the frequency of this disease varies from year to year, apparently being influenced by a change in type or virulence of the causative organisms in current respiratory infections. The pneumococcus, streptococcus and staphlococcus are the most common organisms found in this condition. Graham says that five to ten per cent of all cases in civil practice are due to the tubercle bacillus.

For the general surgeon who has no special equipment or specially trained nursing staff, I am convinced that Graham's plan of treatment of acute empyema, which is the utilization of simple procedures and simple methods of drainage, is far more satisfactory in lowering the morbidity

and mortality than attempting to use complicated forms of apparatus which have been devised and used by some thoracic surgeons. Needless to say, everyone is aware of the dangers of open operation in the streptococcal types of infection in which thin, watery pus is present before a localized abscess has formed or in the formative period of any empyema. When thick pus has formed and the patient's general condition permits, open drainage with rib resection usually gives the most satisfactory results.

In cases where the lung has been almost completely collapsed, the cause of which I do not know, I have felt that some form of closed drainage should be instituted with the hope that expansion would be encouraged. It is the feeling of some men, however, that negative pressure within the pleural cavity and increased pressure within the lungs as produced by blowing balloons, etc., have very little to do with expansion of these collapsed lungs, the most important factor in bringing about expansion, according to Graham, being a gradual pulling out of the lung by contraction of adhesions formed between the visceral and parietal pleurae. From my limited experience, I believe that closed drainage is of great value especially in the treatment of the earlier stages where the lung has shown no attempt to expand following repeated aspiration or when this same picture is seen following open operation with rib resection. Irrigations, especially with Dakin's solution, are withheld for some time after drainage has been established.

CHRONIC EMPYEMA

The establishment of free drainage, removal of foreign bodies and irrigations with Dakin's solution should be the first step in handling these cases. If the cavity fails to show evidence of obliteration in a few weeks, more radical procedures, such as thoracoplasty, removal of the thickened parietal pleura or even decortication may be necessary. In the two cases presented here thoracoplasty with removal of the parietal pleura by the method of Schede was necessary. Neither of these patients had evidence of a bronchial fistula. One of the patients has remained entirely well for two and one-half years; while the other, after working regularly and enjoying apparently perfect health, has recently drained a small amount of sero-purulent material for a short time, the sinus closing spontaneously in about three weeks.

CAVITATION IN PULMONARY TUBERCULOSIS

The beneficial effects and curative value of artificial pneumothorax in this and other types of tuberculous involvement of the lungs cannot be fully appreciated by anyone but the chest specialist. Even though it is considered a form of surgical treatment, I am sure that we who do general surgery know very little concerning its wide field of application. A very

large percentage of patients in our sanatoria, I am told, require this treatment to put the lung at rest and help render the patients' sputa free of tubercle bacilli.

It seems, therefore, that the surgical treatment of cavitation in pulmonary tuberculosis begins with artificial pneumothorax, those not responding to this procedure being given additional surgery in the form of phrenecectomy, pneumolysis and thorocoplasty according to the indications in individual cases.

In the few cases to be shown here the thoracoplasties were, of course, preceded by attempts to obtain satisfactory artificial pneumothorax, most of them had had phrenecectomies but none had undergone pneumolysis. We have observed that the combination of artificial pneumothorax and internal pneumolysis, as advocated and performed in this section by Dr. Julian Moore, has spared many patients from severe thoracoplastic procedures.

In the smaller hospitals where no outside funds are provided for patients without means, we are obliged to subject these individuals to a rather formidable procedure at a single operation. It is often advisable to perform a thoracoplasty in several stages in these patients who have been bed-ridden for several years rather than remove long sections of six to eight ribs at one time. Unfortunately, existing conditions in our own community do not permit us to give these patients the benefit of multiple-staged thoracoplasties.

With this method of handling our prolonged bed-ridden and rather debilitated patients with pulmonary tuberculosis, not only would the mortality be decreased but the final results in obtaining complete obliterations would be more satisfactory than they are when one must attempt to complete the collapse by a single procedure.

FACTORS INFLUENCING MATERNAL MORTALITY RATES IN NORTH CAROLINA

By W. Z. Bradford, M.D., Charlotte, N. C.

Analysis of maternal mortality rates in various sections and communities of the United States has as its aim the reduction of the danger of childbearing in that community and ultimately the lowering of the mortality rate in the country as a whole. In recent years the attention of the medical profession has been drawn to a number of surveys of maternal deaths, outstanding among them being the report of maternal mortality in 15 states by the Children's Bureau of the U. S. Department of Labor, the report of the White House Conference on Child Health and Infant Protection, and the study of maternal mortality in New York City recently completed and published by the Commonwealth Fund. In 1933 the State of North Carolina, under the direction of the Bureau of Vital Statistics

headed by Dr. J. H. Hamilton, commenced a detailed investigation of all maternal deaths occurring in this State.

The outstanding contribution in Dr. Hamilton's first report of 334 deaths in 1933 concerning which questionnaires were returned was the high incidence of maternal mortality from pregnancy toxemias. It is not my purpose to critically discuss the maternal death rate in the State but to call to your attention certain factors that definitely sustain the rate at the relatively high position it now occupies as compared with other states in the Union. To this end I have drawn freely upon statistical information obtained by the N. C. State Board of Health, and the annual reports of hospitals operating under the Duke Endowment, as well as personal information obtained from various sources.

The unavoidable complications of childbirth which will always exist to increase the danger of parturition and to sustain an irreducible minimum of maternal deaths will not be considered. The term "preventable deaths" is most unfortunate and will not be used in this discussion which will be confined to the outstanding "controllable causes" maintaining the high maternal death rate in North Carolina.

The average maternal mortality in the State for the past five years has been 8.2 per 1,000 births while the rate for 1933 was 6.7 per 1,000 births. In 1931 the United States Census revealed that there were only seven states in the Union with higher rates than North Carolina.

In 1933 there were 75,322 deliveries of which 33% were delivered by midwives. The incidence of midwife deliveries is a fair measure of the lack of prenatal care for with the exception of a few isolated clinics in the State the midwife patient seldom sees a physician during her pregnancy. As there are many patients delivered by physicians, particularly in the rural districts, who fail to see their doctor prior to the onset of labor it can be conservatively estimated that fully 50% of the pregnant women in the State have no prenatal care. The pathological entities occurring in this group reach a state of extreme danger prior to the development of symptoms necessitating medical consultation. This situation is a result of social and economic factors usually beyond the physician's control. In many instances the financial income is insufficient to afford medical supervision, in many medical facilities are unavailable (particularly in the more sparsely settled rural areas), and in many instances, of which the negro is most typical, ignorance of the importance of prenatal care further increases the neglected group.

A comparative study of the percentage of deaths from major causes in North Carolina as compared with New York City shows the striking influence of the lack of prenatal supervision. In New York City midwives deliver 8.5% of the births as compared with 33% in this State, where the deaths from toxemias of pregnancy are excessive.

2,041 deaths New York City (Commonwealth Fund)		*334 deaths North Carolina (State Board of Health)*
17.5%	Abortion	11.0%
25.0%	Sepsis	15.0%
9.7%	Hemorrhage	10.0%
12.0%	Toxemia	41.0%

A further comparison of a number of deaths in New York State outside of New York City made by Dr. Kosmak in 1932 with a similar investigation by Dr. Hamilton in 1933 substantiates the unusually high death rate from toxemias in North Carolina. In this comparison deaths from abortion, ectopic, and non-puerperal causes have been eliminated and the comparison limited to the three leading causes of maternal mortality: toxemia, sepsis, and hemorrhage.

N. Y. State 1932 (Kosmak)		*North Carolina 1933 (Hamilton)*
285 Deaths		268 deaths
30%	Sepsis	19%
24%	Hemorrhage	13%
23%	Toxemia	43%

Granted that there may be additional and possibly unknown causes responsible for the large number of deaths from eclampsia and other toxemias in this State, the lack of early recognition is the outstanding factor in sustaining the high mortality rate. While the rate among negroes is nearly double that among whites, Dr. Hamilton's investigations revealed that both races were affected to about the same proportion, for of 209 whites 33% were due to eclampsia and of 125 negro deaths 35% were chargeable to this disease. Prenatal neglect was apparent in the questionnaires, for of the 187 white deaths occurring in physicians' hands 134 were ill upon their first visit and of the 90 negro deaths in physicians' hands 77 were ill when first seen.

A study of hospitalization in North Carolina shows a higher percentage of toxemias admitted to these institutions than of any other entity responsible for maternal mortality. Of the 75,322 births in 1933 only 6,073 or 8% occurred within hospitals. Of the deaths studied 43% occurred within hospitals and of the white maternal deaths 50% were hospitalized. A higher percentage of toxemia patients reached the hospital than of any other form of pregnancy pathology. 54% of the maternal deaths from toxemia occurred within hospitals as compared with 43% of the entire group of maternal deaths. This information was previously discussed in a study of the hospital mortality rates when it was demonstrated that 57% of the maternal deaths occurring in a group of small Duke Endowed hospitals in North Carolina followed eclampsia.

The study of cesarean sections in these institutions throws additional light upon the high toxemia mortality. That the convulsive parturient is a poor surgical risk has been demonstrated by numerous investigators. The high incidence of cesarean section and the mortality rate from this operation deserves analysis.

INCIDENCE OF CESAREAN SECTION

(Duke Endowment, North and South Carolina)

	Term Deliveries	*Cesareans*	*Percentage*
1930	6165	333	5.4%
1931	6344	335	5.2%
1932	7719	391	5.4%
1933	7731	475	6.1%

CESAREAN SECTION MORTALITY

(Duke Endowment, North and South Carolina)

	White Hosp.	*W. & N. Hosp.*	*Negro Hosp.*	*Average*
1930	4.6%	14.0%	40.0%	13.8%
1931	2.9%	9.3%	22.2%	8.4%
1932	3.8%	12.0%	23.3%	10.7%
1933	2.2% (137 sec.)	7.7% (313 sec.)	16.0% (25 sec.)	6.5%

DEATHS FOLLOWING CESAREAN SECTION

(Duke Endowed Hospitals, North and South Carolina)

	Term deliveries	*Mat. deaths*	*Deaths following Cesarean*
1932	7219	112	42 (37% of all mat. deaths)
1933	7731	100	31 (31% of all mat. deaths)

It is evident from these tables that a large proportion of the maternal deaths occurring in the hospitals follow this operation and that the death rate from the operation is high. Poor operative risks, injudicial choice of operation, or faulty technique must be responsible. From the study of the operative incidence in the deaths from toxemias it is evident that the first of these, namely, poor operative risks as a result of subjecting the eclamptic to abdominal surgery is one of the principle factors.

Of 334 maternal deaths studied by Dr. Hamilton 123 or 36% were delivered by operative measures. Of the 138 toxemia deaths 40% were delivered by operative means. Nearly two-thirds of these were operations other than forceps deliveries. The conclusion may be drawn that of 75 toxemia deaths occurring in the hospitals of North Carolina 32 were delivered operatively by methods other than forceps, i.e., cesarean or version.

The relationship between indication for cesarean and the post-operative mortality is revealed in the following two tables. The first of these is an analysis of a large series of cesareans from the Chicago Lying-In Hospital by Greenhill, and the second an analysis of a large series of cesareans in the hospitals of Brooklyn by Gordon.

MATERNAL MORTALITY FOLLOWING CESAREAN

(Greenhill)

Disproportion	0.8%
Repeated cesarean	1.6%
Cardiac disease	3.4%
Eclampsia	6.3%
Abruptio placentae	7.1%

MATERNAL MORTALITY FOLLOWING CESAREAN
(Gordon)

Indication	*No. Cesareans*	*Maternal Mortality*
Contracted pelvis	934	5.8%
Toxemias	210	16.2%
Hemorrhage	117	6.0%
Other conditions	544	6.3%

On the other hand the role of ultra conservatism in those cases showing toxemic symptoms upon their first visit is difficult to properly evaluate. Detailed examination of the questionnaires reveals that although many of these patients were presenting symptoms of impending convulsions or severe vasculo-renal injury that a conservative plan of treatment was adopted until the patient was critical whereupon radical intervention was undertaken too late. This type of death cannot be criticized with fairness for the mistake in judgment was only demonstrable by death however early interruption in the pre-eclamptic by rupture of the membranes and therapeutic abortion in the nephritic when first recognized might have resulted in a lower mortality.

Sepsis was accountable for 51 maternal deaths out of 334 and if to this group are added the 24 deaths from septic abortion a total of 22.5% of the maternal mortality was due to infection. The high incidence of operative intervention in this group is the most striking predisposing factor. Of 38 patients who died from sepsis and who were under a physician's care at delivery 17 or 44% were operative deliveries and 13 of the 17 were operations other than forceps, i.e., cesarean or version. Hemorrhage occurred in 15 or 40% of the cases subsequently dying of puerperal sepsis. Retained placenta occurred in 9 of the maternal deaths at term and in 8 of the 24 deaths from septic abortion. There were 13 operative interventions in the group of 24 patients dying from septic abortion.

While it is impossible to fairly criticize any of these cases from the limited information obtained on a questionnaire where possible extenuating circumstances are not explained and where the technique, the availability of blood transfusion and many other factors are unknown, certain general conclusions may be clearly drawn from these facts. The role of operative interference, particularly version, cesarean, and manual removal of a retained placenta, and the part played by severe blood loss during delivery in predisposing to sepsis through lowering of general resistance is clearly demonstrated. This is especially true in cases of retained placenta, manual removal of the same being regarded by many authorities as the most dangerous operation in obstetrics. There were 17 cases of retained placenta in 62 patients dying in physicians' hands of sepsis. In many of these, particularly following septic abortion, a detailed study of the questionnaire revealed that curretage was employed and that a uterus already infected was invaded surgically. The fundamental fact that the only indication justifying invasion of the septic uterine cavity is uncontrollable

hemorrhage and then the evacuation should be gently done with a sponge stick or the finger and never a sharp curet, needs re-emphasis.

It is impossible to discuss the utilization of blood transfusion in these cases, and likewise the septic deaths following cesarean for the number of cases in which the low cervical operation was employed in preference to the classical is unknown. However in a state where only 8% of the deliveries are hospitalized there are doubtless many cases of disproportion not recognized until after a long trial labor. These cases reach the district hospital potentially infected, and with a lowered resistance from physical depletion. Where abdominal delivery is indicated the greater safety of the low cervical and other extraperitoneal operations over the classical cesarean section in this type of case has been proven.

In summary it may be said that the most outstanding cause of the existing maternal mortality rate in North Carolina today is the large number of deaths from toxemia of pregnancy, which constitutes over 40% of the deaths investigated by the State Board of Health. Inadequate prenatal care largely due to social and economic factors existing in a state with a large rural population where midwives deliver one-third of the births, results in failure of recognition or neglect of the toxemia until the pathology had advanced to a most dangerous stage. While it is true that a few patients develop eclampsia and die who have been surrounded with every precaution, at the same time the vast majority of toxemic deaths were in women who lacked proper medical supervision.

The physician and the hospital are not responsible for death in the neglected toxemia. However this study reveals a responsibility in the high incidence of operative intervention in three cases. Both forceps and cesarean section have been utilized frequently upon the case in acute toxemia when it is well established that the eclamptic is a poor operative and particularly a poor cesarean risk.

A study of a large series of eclamptics treated by conservative methods is needed for comparison to ascertain if the type of toxemia in this State is more fulminating and more highly fatal than elsewhere. Until this information is available it is suggestive that radical evacuation of the uterine contents in the presence of convulsive toxemia, as is practiced in many institutions in this State, contributes to many deaths and aggravates a death rate already made high through social and economic factors beyond the physician's control.

. . . Dr. David R. Lyman, Superintendent Gaylord Farm Sanatorium, Wallingford, Conn., gave a most interesting lecture based on a large amount of research from the subject, "Pregnancy and Tuberculosis." He has not been able to furnish a manuscript.

THE CHARLOTTE MEDICAL LIBRARY

R. B. McKnight, A.B., M.D., F.A.C.S., *Directing Librarian*

Mr. President and Ladies and Gentlemen of the Medical Society of the State of North Carolina:

The purpose in presenting an exhibit and address on the Charlotte Medical Library is three-fold: (1) We want you to know what we have in Charlotte in the way of a well equipped, efficiently managed and completely functioning medical library, (2) we want you to know that the use of this library is open to any physician outside of Charlotte at no cost other than transportation charges of bound volumes sent him, and (3) we hope that other county societies will become actively interested in the establishment of a medical library, just as Buncombe has done.

The Charlotte Medical Library is one of only three of contemporary size and not associated with a school of medicine in the South east of the Mississippi. It was begun in 1909 as a "journal exchange" between several local doctors, who saw the advantage of grouping the periodicals to which each subscribed, so that a larger volume of medical literature would be readily available to all. The names of Drs. William Allan, Thomas Wright, C. N. Peeler, R. H. Lafferty and others are prominently connected with the establishment of this exchange. A year or two later the "Library Club" was formed with about twenty-five members paying dues. The number of periodicals on subscription was increased, and the binding of these as volumes were completed was started. In 1915, when the North Carolina Medical College closed its doors, many of its books and bound volumes were transferred to the Library Club. The bound periodicals especially were of considerable value. This influx of material led to a reorganization of the Library Club to the Charlotte Medical Library Association in 1915. The number of subscriptions was enlarged until there were about 60 periodicals on regular subscription.

For about 10 years the library flourished, and then interest began to wane, chiefly because a full time librarian was not employed. In 1930 plans for doing away with the library were under consideration. Many journals had been lost, dues were almost hopelessly in arrears and interest at a low ebb. At a meeting of some 12 or 15 of the more interested members, Dr. R. B. McKnight was asked to take charge of the library and attempt to restore its prestige and efficiency. He asked for absolute authority, as he believed no professional library could be maintained effectively unless under the direct management and charge of one individual, and a library committee with which to confer on matters of policy. Such was granted and full coöperation pledged. The committee now consists of Dr. R. B. McKnight, Chmn., Dr. L. C. Todd, and Dr. T. D. Sparrow.

Active work on reorganization was begun at once. It was deemed advisable to coördinate all medical activities under one organization. Accordingly a joint committee of the library and Mecklenburg County

Medical Society, headed by Dr. V. K. Hart, established what we call the Physicians' Credit Exchange, membership in which costs five dollars a month. For this fee the member secures (1) membership in The Medical Society of the State of North Carolina, (2) The County Medical Society, (3) The Charlotte Medical Library, (4) The Charlotte Merchants' Association, (5) access to the names of delinquent patients and "dead beats," of which we have several thousand listed in the exchange office, (6) a collection system of old accounts and (7) a 24-hour telephone service. No one is under obligation to join the Exchange, but about 70 are members. One can belong to the Mecklenburg County Medical Society or the Charlotte Medical Library separately. About 15 belong to the Library in addition to those who hold membership in the Library through the Exchange. Each branch of the Exchange is budgeted from its income.

It was found that there would be sufficient funds to employ a full time, trained librarian, practically double the subscription list, purchase lost issues and take care of the binding of past and current periodicals as they accumulated. Mrs. Helen Sherrill Monahan, a most efficient, well trained librarian, was employed. She is active librarian and also in charge of the Exchange office, which is located in the Library. Her hours are from 10:00 to 1:00 and 2:00 to 6:00. At all other times, except nights of the Mecklenburg County Medical Society meetings, the Library is closed.

Our present periodical list was made up through: (1) the former subscription list as a basis, (2) advice from such medical libraries as those of the American Medical Association and the Mayo Clinic, and (3) from replies from questionnaires sent the local doctors requesting which journals they desired on subscription. A list of the periodicals on subscription, arranged according to their specialization, follows:

Pediatrics

1. Am. J. Dis. Child
2. Arch. Pediat.
3. Arch. Dis. Childhood
4. Brit. J. Child. Dis.
5. J. Pediat.

Physiology, Pharmacology & Chemistry

1. Am. J. Physiol.
2. J. Biol. Chem.
3. J. Pharmacol. & Exp. Therap.
4. Physiol. Rev.

Pathology, Bacteriology, Clinical-Pathology

1. Am. J. Cancer
2. Am. J. Clin. Path.
3. Am. J. Path.
4. Arch. Path.
5. J. Bact.
6. J. Parasitol.

Eye, Ear, Nose and Throat

1. Am. J. Ophth.
2. Ann. Otol. Rhin. & Laryng.
3. Arch. Ophth.
4. Arch. Otolaryng.
5. Brit. J. Ophth.

Neurology & Psychiatry

1. Am. J. Psychiat.
2. Arch. Neurol. & Psychiat.
3. Brain.
4. J. Juvenile Research.
5. J. Nerv. & Ment. Dis.

Public Health-Hygiene

1. Am. J. Hyg.
2. Am. J. Pub. Health
3. Health Bulletin
4. J. Indust. Hyg.
5. Pub. Health Rep.

7. J. Path. & Bact.
8. Stain Technology
9. Trans. Am. Microscopical Soc.

Radiology

1. Am. J. Roentgenol.
2. Radiology

Index

1. Quar. Cum. Index Med.

General Surgery, Surgical Specialties and Obstetrics

1. Am. J. Obst. & Gynec.
2. Am. J. Surg.
3. Ann. Surg.
4. Arch. Surg.
5. Australian & New Zealand J. Surg.
6. Brit. J. Surg.
7. Brit. J. Urol.
8. Anesth. & Analg.
9. J. Bone & Joint Surg.
10. J. Obst. & Gynec. Brit. Emp.
11. J. Thoracic Surg.
12. J. Urol.
13. Southern Surg.
14. Surg., Gynec. & Obst.
15. Surg. Clin. North America
16. Urol. & Cutan. Rev.

Special

1. Ann. M. Hist.
2. Hygiea.
3. J. Chemotherapy
4. Med.-Leg. J.
5. Mod. Hosp.
6. Science
7. Scient. Monthly

Internal Medicine and its Specialties

1. Am. Heart J.
2. Am. J. Digest. Dis. & Nutrition
3. Am. J. M. Sc.
4. Am. Rev. Tuberc.
5. Am. J. Syph. & Neurol.
6. Am. J. Trop. Med.
7. Ann. Int. Med.
8. Arch. Dermat. & Syph.
9. Arch. Int. Med.
10. Bull. Johns Hopkins Hosp.
11. Clin. Sc.
12. Edinburgh M. J.
13. Endocrinology.
14. Internat. M. Digest.
15. J. Allergy.
16. J. Exper. Med.
17. J. Immunol.
18. J. Infect. Dis.
19. J. Lab. & Clin. Med.
20. M. Clin. North America
21. Proc. Soc. Exper. Biol. & Med.
22. Trans. Am. Study Goiter.

General

1. Brit. M. J.
2. Bull. New York Acad. Med.
3. Canad. M. A. J.
4. Chinese M. J.
5. Collected Papers Mayo Clin.
6. Guy's Hosp. Rep.
7. Indian M. Rec.
8. Internat. Clin.
9. Internat. J. Med. & Surg.
10. J. A. M. A.
11. Journal-Lancet.
12. Lancet.
13. Med. Rec.
14. New England J. Med.
15. New Orleans M. & S. J.
16. Northwest Med.
17. Presse Med.
18. Proc. Internal. Assemb. Inter-state Post-Grad. M. A. North America.
19. Proc. Roy. Soc. Med.
20. Proc. Staff Meet Mayo Clin.
21. South. Med. J.
22. South. Med. & Surg.
23. Southwestern Med.

AND the following State medical society journals:

Alabama, Arkansas, California, Colorado, District of Columbia, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Minnesota, Missouri, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin. 26.

Total number periodicals on subscription in the Charlotte Medical Library: 129.

The use of the Charlotte Medical Library has grown enormously during the past four years. In 1934, for example, there were 475 reference questions on which complete bibliographies were supplied; a total circulation of bound volumes and current journals taken out of the Library of 1,500; a total circulation of bound volumes and current journals used in the Library of over 6,000. This will give some idea of the great volume of reference work in the diagnosing and treating of patients, preparation of scientific manuscripts and addresses, and in collateral reading done by those physicians associated with the Charlotte Medical Library.

There are between seventy-five and eighty members of the Charlotte Medical Library. It holds membership in the American Association of Medical Libraries, and, as a library, has the vast amount of material at the Surgeons General's Library at its disposal. The use of this Library is offered to any doctor outside of Charlotte for no cost other than carrying charges for material supplied him. Books have been sent as far south as Mississippi! Not a single volume has been lost. This Library is not open to the public.

The finances of the Library are sound. The librarian is paid a salary of $1,200.00 a year by the Physicians' Credit Exchange, as she also serves as its secretary, and such duties take up at least half of her time. The Library is allotted $800.00 annually from the Exchange budget, and other individual memberships brings its income up to approximately $1,100.00 a year; with the generous donations of subscriptions by a number of local doctors, H. P. Barret, Wm. Allan, J. M. Northington, J. S. Gaul, and others, this is sufficient to handle our paid subscriptions, binding and incidentals.

The officers of the Charlotte Medical Library believe that in order to maintain an efficient medical library, certain principles must be adhered to: (1) There must be sufficient financial backing worked out through some plan agreeable to the majority of the physicians of the community. (2) There must be adequate space for shelving, reading table, stack room and office and clerical fixtures for the librarian. (3) A full-time librarian is necessary. She should be at least partially trained. (4) Strict business principles should be adhered to. All periodicals or books taken out must be signed for and returned at a specified time. Dues must be collected regularly. Regular hours observed, etc. (5) A local library committee of three headed by a physician who will make the library his hobby. He must be a scholar and one who loves books. He should be given full power to handle the library as if it were his own—reporting, of course, to the Association at certain intervals. The committee should function as a body to act on emergency matters, or such contingencies as may arise where it is advisable that one man alone should not shoulder the responsibility. (6) Most important of all, the majority of physicians should give the Library their moral and financial support. These principles have been followed in the management of the Charlotte Medical Library, and in so

doing, not only have the physicians at their disposal this wealth of material, but indirectly the public is served to an extent impossible of estimation.

THE CONTROL OF RABIES

By Roy Norton, A.B., M.D., Health Officer, Rocky Mount, N. C.

(Presented before the Section on Public Health and Education May 7, and before the General Session of North Carolina Medical Society meeting May 8, 1935, at Pinehurst.)

Rabies is one of the few diseases which man has learned to prevent. The etiological agent and cure are not known. Any community sufficiently large, or partially isolated, can prevent, or drive from its midst, this horrible disease. By a six months quarantine of incoming dogs, Australia and New Zealand have prevented rabies from getting a foothold in these lands. By eliminating the stray dog through strict muzzling, and by quarantine, England and the Scandinavian countries have eradicated rabies. It is important to freely discuss a disease about which so many misconceptions and so much silly sentimentality tend to develop. Few things can cause greater suffering or more paralyzing and unreasoning fear than the thought that a mad dog is at large in the vicinity. The high fatality rate of rabies, the horrible symptoms, the needless suffering caused, the great economic and sentimental losses along with the fact that it is absolutely preventable, make this disease of tremendous interest.

Rabies, or hydrophobia, is an acute, specific, rapidly fatal paralytic infection of all warm blooded animals. It is communicated to a susceptible animal chiefly by means of saliva on fresh wounds, produced usually by a biting dog. The wound or abrasion may be invisible to the naked eye. The disease is perpetuated by the canine family and 95% of human exposures are caused by dogs. The virus is harmless when ingested provided the mucosa is intact. The disease is 100% fatal in man; supposed recoveries were most likely lyssaphobia, although recoveries have been reported in experimentally infected dogs, rabbits and guinea pigs.

The incubation period is remarkably variable in man but almost always 20 to 60 days. In dogs and most animals it is 20 to 40 days. With severe bites in close proximity to the brain the incubation period tends to be shorter. The filterable virus seems to travel along the nerves and is later found chiefly in the saliva and central nervous system although it has been found in the adrenals, tear glands, pancreas, vitreous humor, spermatic fluid, urine, lymph, milk, peripheral nerves, spinal and ventricular fluids. It is usually present in the saliva three or four days before clinical symptoms of rabies appear. Reports of infectiousness fourteen days before appearance of symptoms have caused some health officials to recommend a fourteen-day observation period for biting dogs.

About 85% of rabid dogs have the furious type and 15% the dumb or paralytic type. In the furious type the symptoms consist of a change in

disposition, restlessness and excitement, tendency to leave home, loss of normal appetite and swallowing indigestible objects, husky brassy voice, weakness and spasm of throat muscles with difficulty of swallowing, snapping, running, frothing and paralysis. The characteristic changes in the dumb type are a depressed and melancholy attitude and rapid development of paralysis—without the frothing, wandering, or raging. A most important and dangerous symptom is the simulation of having a bone in the throat.

Pasteur treatment produces active immunity in over 99.9% of cases within fifteen days after the last injection. Observations show that in untreated cases rabies develops in 10 to 50%, usually 15 to 20%, after rabid dog bites. Wolf and cat bites cause rabies in a greater percentage of cases.

Rabies control involves treatment of the infected wounds, Pasteur prophylaxis and measures aimed at dogs. Puncture wounds should be immediately and widely opened. Debridement should be thorough and followed by cauterization with fuming nitric acid. Iodine and other ordinary antiseptics are of little, or no, value against the virus of rabies.

Pasteur prophylaxis should be used as indicated below. Attenuated or killed fixed virus is used. When street virus, obtained from dogs naturally infected, has passed through successive rabbits until they regularly sicken on the sixth or seventh day and die on the ninth or tenth day, it is called fixed virus. Fixed virus cannot be returned to street virus, has attained a high virulence for rabbits, lost much of its potency for dogs and seems to be avirulent for man when injected subcutaneously. Complications of treatment other than erythematous or fever reactions (probably allergic) are rare. Recovery from the rare cases of treatment paralysis is usually complete but fatalities occur in 5 to 15% of them. Pasteur treatment usually causes no inconvenience and the pain of administration may be greatly reduced by using small needles and alternating sites of injection. There are no contraindications to its use except that it should be stopped if rabies or paralysis develops.

When a person is bitten, the first impulse is to kill the dog immediately, usually by shooting it in the head. For a dependable examination, the head must not be injured and since a dog may be infectious a few days before definite rabies symptoms develop, it is important to educate the public to the habit of confining and observing the suspicious biting dog for a ten to fourteen day period. If the bite is about the face or head and there has been rabies in the district in six months, it is well to begin treatment at once and then discontinue later if observation or examination shows the dog not to be infectious. If a satisfactory head examination is unobtainable, as for instance when the dog is killed at once, is unknown, or disappears within the ten-day period, treatment should be given.

Rabies may be completely eradicated by proper measures directed toward dogs. Nation-wide action is required. Since 95% of rabies is spread

by stray dogs, since the disease is perpetuated by the canine family, since England, Denmark, Norway and Sweden eradicated rabies by measures aimed at dogs and since Australia and New Zealand have kept out rabies by quarantine measures against dogs, it is obvious that intensive control measures against cats and other warm-blooded susceptible animals will become unnecessary.

To get rid of rabies in a community, the most useful control measures are:

1. First, and most important, is education of the public to keeping all dogs confined on the premises of the owner, except when hunting with a licensed hunter or while tending or driving domestic animals. This measure is a protection to valuable dogs against theft and motor traffic. How indignant many of our citizens were in Eastern North Carolina a few years ago when a law requiring confinement of hogs, cows, mules and horses within fences was proposed. That confinement was purely an economic measure. A wandering cow or hog will cause considerable property damage; the stray dog is a nuisance to property but in addition is a menace to health.

2. Consistent muzzling of all dogs allowed off the premises of owners is very important according to the experience of England. Holding on leash gives additional protection. Impounding and destruction of stray, and proper supervision of licensed, dogs is helpful. The muzzle and leash cause no more discomfort than a bridle, saddle, or harness on a horse or mule, impractical sentimentalists to the contrary, notwithstanding. We may eventually be as willing to observe rules for the sake of health as for economic gain.

3. Six months federal quarantine under veterinary supervision for each imported dog prevents the introduction of rabies from abroad.

4. Owners should be held legally responsible for damage inflicted by their dogs. Our State statute regarding this should be made use of. Collection of a tax limits the number of useless dogs.

5. The public should be educated to the danger of rabies. Suspected rabid animals should be promptly reported to the local health department. The local paper can assist by publishing a description, and probable route, of any dog suspected of being rabid.

6. Annual immunization of all licensed dogs against rabies helps greatly. The results in Albany (Georgia), San Diego, Dallas, Baltimore, and other local communities have been encouraging. The Detroit experience has shown that there is eleven times as much rabies among unvaccinated dogs as among the annually vaccinated dogs and that the chance of a vaccinated dog contracting rabies after exposure is reduced to five per cent or less. Two years' experience in Rocky Mount has indicated that further trial and observation of this adjunct to local control is needed. It is important to use a fresh, potent vaccine made from a preparation of killed fixed virus.

All dog lovers will appreciate the fact that once rabies has been stamped out in a country, the only measure absolutely essential then to continued prevention is strict federal quarantine along national borders. Of course, no civilized community should ever tolerate the depredations of useless strays or allow vicious dogs to endanger the well-being of little children.

For several years Rocky Mount has had an ordinance requiring the muzzling, registration and vaccination of dogs but no dog catcher was employed regularly and the law was disregarded. If there was a mad dog scare a dog catcher was employed for a month or two, a few dogs impounded and some destroyed. As a rule, however, dogs swarmed the streets unmuzzled, collarless and undisturbed. Yards were littered by overturned garbage cans. Flowers were trampled. Playing children were frightened by strays and many were bitten. Occasionally a child was badly mangled. At frequent intervals a rabid stray infected several dogs and cats, and dozens of persons each year had to take the painful Pasteur treatments. A great many very valuable and useful dogs were lost in this way. The local newspaper waged a vigorous campaign to get something done. It is unfortunate that careful records of rabies exposures for past years were not kept, but in January 1933 one local physician was giving nineteen Pasteur treatments at one time. He got up a petition among the local physicians and presented it to the board of aldermen. A new ordinance requiring the muzzling, registration, tagging and annual vaccination of dogs and the employment of a full time dog catcher resulted.

Since March 2, 1933, we have had a dog catcher and his assistant at work protecting the valuable dogs and little children of our city from the menace of rabies and the highly objectionable "stray." An average of almost 100 stray dogs a month have been disposed of. Useful dogs are registered, annually inoculated, and when off the premises are muzzled or held on leash. Little children can play in greater safety and dog lovers are not losing their valuable hunting or house dogs. Since owners expect their dogs to remain at home, more comfortable living quarters have been provided for them.

During the last twenty-six months over 4,000 inoculations have been given by our veterinarian without a single vaccinated dog developing rabies unless previously exposed and with no untoward effects attributable to the vaccine. During this time we have a record of 21 dogs developing rabies in the adjacent territory within 8 miles of Rocky Mount. We estimate that this area has a dog population smaller than that of the city. However, only 4 dogs developed rabies in Rocky Mount and none of these had been vaccinated. As a result of these 25 cases of rabies in dogs, 54 persons have taken the Pasteur treatment, 56 other dogs, 1 hog, 1 calf and 48 cats were killed and 2 cows and 1 hog developed rabies. The entire trouble with rabies in Rocky Mount during this 26 months has been due

to failure to observe our regulations or to dogs wandering in from the outside.

The dog catcher has done excellent work. He loves and remembers dogs well and handles them humanely. He has returned many lost or stolen dogs to the owners. Card records filed by streets and numbers are carried by the dog catcher and acts of viciousness are recorded on the registration cards and coöperation of owners secured in curbing this menace. Owners are encouraged to confine the dog on their premises, although our ordinance allows the muzzled, vaccinated dog freedom of the city. The stray dogs caught are turned into an inclosure at the city pound and if the animal is not called for after three days it is killed by gas, picked up on a fork and disposed of without handling and exposure. Individual metal cages are used for the ten-day observation period of suspicious dogs that have bitten persons. The enforcement of the ordinance has eliminated trouble with mad cats. Teachers and pupils have learned not to allow stray dogs on school grounds or in school rooms, and children have learned to absolutely avoid handling stray dogs and cats. The public and policemen have learned to think of the observation period rather than immediately shooting a biting dog in the head. The whole community has been very coöperative. The increased income from more complete listing for taxes has paid for a large part of the expense of dog catcher, equipment and enforcement.

It is practically impossible to accurately evaluate dog vaccination in a short time. The combination of efforts enumerated above have proved exceedingly helpful in handling a problem that is difficult everywhere in this country. Phenol-killed vaccine has been used because we started with it and experience has been satisfactory. Certain other communities have used chloroform-killed vaccine with equally good or better results. The chief value of vaccination is probably in the added protection against exposures of which the owner knew nothing. Either the annual vaccination has produced immunity or the other rigid control measures have been decidedly effective in preventing exposure of dogs to rabies so far. In either case the results are encouraging and have proved a great joy to all those interested in the health and happiness of useful dogs and of little children.

Attention is particularly called to the fact that no single method of rabies control has been completely successful with the exclusion or neglect of other recognized methods. Evaluation of vaccination is difficult because wherever this has been tried other adjuncts have also been stressed. We grasp too quickly for some easily-applied panacea and overlook the importance of general common-sense measures. We should not expect too much of the annual single-dose prophylactic vaccination of dogs. Even the admittedly more efficient anti-typhoid vaccination cannot supplant general measures of sanitation. The recent experience of Rocky Mount seems to indicate that annual vaccination is very helpful, but no one knows how

much credit goes to the elimination of over 2,000 strays, muzzling, education, confinement and other measures. Perhaps experience with North Carolina's new law requiring state-wide annual vaccination of dogs will furnish useful information.

TO SUMMARIZE:

Rabies is an acute infectious disease of all warm-blooded animals. The etiology and cure are not known. Experience has shown that any country can prevent or eradicate it. Rabies is perpetuated in the canine family and 95% of cases are due to dogs, most of them unwanted and useless strays. The disease is a constant threat to all valuable hunting and pet dogs and every human being in this country. Federal requirement of muzzling and quarantine with the impounding and destruction of stray dogs would eradicate rabies in the United States in a few years. In the meantime, local communities can effectively reduce the menace of this disease by requiring confinement of dogs on owners' premises, muzzling, impounding and destruction of strays, holding owners liable for damage inflicted by dogs, and registration, tagging, taxing and annual vaccination. The experience of two years in seriously attempting to control rabies in a community of 25,000 population has been very encouraging. The methods used and described here have been humane, inexpensive, and effective. To national indifference may be attributed the fact that we still have the constant hazard of this terrible disease in our country; if local indifference is overcome, much can be done to better conditions in any community.

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PULMONARY PATHOLOGY OF INFANCY AND CHILDHOOD

A Clinical Review from the Bronchoscopic Viewpoint**†

By V. K. Hart, M.D., Charlotte, N. C.

Much has been written on the recognition and management of foreign bodies of the respiratory tract of childhood and their attendant infections. Our own experiences over a ten-year period have been previously given in a paper in which we analyzed a large series of consecutive foreign bodies of the food and air passages.[1] A second communication dealt with our

** Bacteriology and Pathology by Dr. L. C. Todd. All radiographic work not otherwise specified by W. E. Roberts.

† From the Charlotte Eye, Ear, Nose and Throat Hospital. Given before the Eye, Ear, Nose and Throat Section of the South Carolina State Medical Society at Columbia, October 17, 1933; before the North Carolina Pediatric Society at Charlotte, May 23, 1934; and before the General Sessions of the North Carolina State Medical Society at Pinehurst, May 8, 1935.

experiences with oxygen therapy in the postbronchoscopic care of children following the extraction of foreign bodies.[2] Hence, in the present paper we shall not deal with foreign bodies per se.

Pulmonary suppuration has had a voluminous bibliography since the advent of bronchoscopy. Nevertheless, surprisingly little has been written solely on the pediatric aspect.

The presentation of this subject is intended to be practical. Such practicality is the only proper fort for those of us engaged in an active clinical practice. In this every day medicine we are constantly seeing children with various types of pulmonary pathology. Only in recent years have we come to a clearer understanding of the same, largely because of better X-ray technique and bronchoscopic study. Concomitantly, we also realize all the problems are not solved.

Both of these viewpoints will be illustrated by the subsequent clinical data. Laboratory findings will be mentioned only when relative. All bronchoscopies not otherwise specified were without anesthesia.

The appended clinical cases are presented in order according to the following improvised classification:

Suggested Classification of Pulmonary Pathology of Infancy and Childhood.

1. Congenital Defects.
    - A. Congenital Tracheoesophageal Fistula.
    - B. Congenital Air Cyst of the Lung.
    - C. Congenital Stenosis of Terminal Bronchi.
2. Primary Bronchial Diphtheria.
3. Suppurative Pneumonitis, Acute or Chronic.
    - A. Obstructive Atelectasis with Secondary Drowning and Pneumonitis. Acute Symptoms may not be marked.[3]
        - a. Endobronchial.
            - 1. Postoperative, Particularly After Oral Surgery.
            - 2. That Complicating Pneumonia.
        - b. Extrabronchial.
            - 1. By Peribronchial Tubercular Glands.
    - B. Other Types of Pneumonitis.
        - a. That Complicating a Diffuse, Acute Purulent Bronchitis. Basal in Type.
        - b. That Due to Direct Extension of a Tuberculous Mediastinitis to the Bronchus or Lung Parenchyma.
        - c. That Complicating Chronic Upper Respiratory Infecfection.
        - d. That in Which Onset Dates to Some Acute Respiratory Infection.

C. Pneumonitis Which Has Progressed to Frank Cavity (Abscess) Formation.

a. Postoperative. May Be Embolic with First an Infarct, or Aspiration Type, or Both Factors May Be Present. Preliminary Pneumonitis May Be of Short Duration. Course Acute.[3] Post-tonsillatomic the Most Frequent.

b. Complicating or Following Other Diseases. Postpneumonic Abscess the Most Important.

4. Bronchiectasis Secondary to Neglected Foreign Body.

1. *Congenital Defects.* The most common type is the congenital tracheoesophageal fistula. In the last ten years we have had three of these cases. All were autopsied and proved to be the same type, viz., a blind upper esophageal segment, and a lower segment connecting directly with the trachea. Therefore, when palliative gastrostomy is done, the baby coughs up milk.

There is inability to retain milk from the onset of nursing. Esophagoscopy during life discloses the imperforate esophagus and establishes the diagnosis.

Since there are a number of case reports on record, including one of my own,[4] I do not here cite a case in detail. There are also other types of congenital anomalies of the esophagus reported.

We have never seen in our clinic a congenital air cyst of the lung. This condition must be rare as Croswell and King[5] were able to find only 121 cases, including one of their own. This case recovered after repeated aspirations of air by transpleural puncture. They usually die.

One case of congenital stenosis of the bronchi to the left upper lobe has been reported by Phillips and Lafferty.[6] This case was seen in consultation by one of my associates, C. N. Peeler. Dr. Peeler was not able to get a 4 mm. 'scope through the larynx without undue trauma. (This was before the advent of the 3½ and 3 mm. 'scopes now available for such cases.) The patient was 2 months of age when seen because of dyspnea and cyanosis. The baby died at the age of 3 months. Autopsy by a reliable pathologist disclosed marked stenosis of the bronchi to the upper left lobe with ball valve action such that an ingress of air was possible, but no egress. Therefore, there was marked emphysema of this lobe with displacement of the heart and mediastinal structures to the right. This greatly embarrassed the normal right lung with eventual death. The lower left lobe was atelectatic due to the distension of the upper left lobe. (See Plate II.)

2. *Primary Bronchial Diphtheria.* Fortunately this malady is uncommon. More frequent, however, is primary tracheobronchial diphtheria.

Since we have previously reported a case of primary bronchial diphtheria,[7] we pause here only to emphasize certain cardinal points. In any

dyspnea endoscopic examination with direct visualization of pathology and the taking thereby of direct smears and culture is important. Proper therapy can only thus be instituted early.

The therapy other than the prompt administration of antitoxin is bronchoscopy as necessary. Since our previous report with autopsy findings, we have had one child age 2 years with tracheobronchial diphtheria recover by doing five emergency bronchoscopic removals of membrane from both main bronchi preceded by complete collapse each time. The operating room was kept set up night and day. Tracheotomy had been done previously. Four years has elapsed since and the child has remained well.

This type of infection will give an expiratory (asthmatic) type of dyspnea in contradistinction to the inspiratory dyspnea of laryngeal and tracheal obstruction. This expiratory dyspnea should always suggest bronchial obstruction and is a clear-cut indication for bronchoscopy. Emphysema with relative clinical findings is present.††

3. *Suppurative Pneumonitis, Acute or Chronic.* The phrase should be used in a strict sense: an area of increased density on a roentgenogram corresponding clinically to infiltrated, exudative pathology which has progressed to the stage of pus formation. Obstructive atelectatic conditions are first considered. In such we have, of course, a secondary pneumonitis.

Case 1. *Postoperative Obstructive Atelectasis.* A white girl age seven years was sent to us, September 11, 1932, because of cough and periodic dyspnea which symptoms had supervened following a tonsillectomy 2 months previously. She had surprisingly little afternoon temperature. Roentgenogram showed an obstructive atelectasis of the right lower lobe. This cleared completely shortly after one bronchoscopic aspiration of a small amount of pus from the lower lobe bronchus, using a No. 5 'scope. Whether this began from retained viscid secretion, aspirated blood with formation of a clot, or aspirated vomitus is only of academic interest.

Case 2. *Obstructed Atelectasis Complicating Pneumonia.* This patient had a most unusual course clinically and the record is abstracted in some detail. While bronchoscopy was not the only factor in her ultimate recovery, it played an important part. Coryllos and Birnbaum[8] have done a great deal of experimental and clinical work on this problem. They emphasize it as a true entity in connection with the thick viscid pus characteristic of the pneumococcus.

A white female child, age 2 years, was first seen at the Presbyterian Hospital, May 12, 1933, with Dr. John Ashe, pediatrician. At that time she had a right facial paralysis complicating a frank acute otitis media right for which immediate paracentesis was done. There was also some clinical evidence of a bronchopneumonia. Realizing that, particularly in

†† Tucker has previously mentioned this phenomenon. His name was inadvertently left out of Bibliography. The reference is: Tucker, Gabriel: Obstructive Dyspnea; bronchoscopic observations. Types, with illustrative cases. South. M. J. 25:723 (July) 1932.

a child, a facial paralysis may result from a simple middle ear infection, antrotomy was deferred. With increasing temperature and toxemia out of proportion to the chest signs, this was done rapidly under local anesthesia on May 20, 1933. On May 26, 1933, the breath sounds were markedly diminished over the whole lower left chest and roentgenogram showed evidence of a beginning obstructive atelectasis. Bronchoscopy was advised and done, using a special 3½ mm. 'scope. (This small size plus a very short working time of three to four minutes, circumventing any post-bronchoscopic laryngeal edema whatsoever.) Foul smelling viscid pus was aspirated from the left main stem bronchus. Two cubic centimeters of monochlorphenol were instilled. The bronchoscopic specimen was negative for tubercular organisms. Postbronchoscopic temperature showed a sharp drop. Bronchoscopies, using the same technique, were carried out as often as every other day. The temperature response was favorable. In all, eleven bronchoscopies were done.

Transfusions were done by Dr. Ashe on May 26, 1933, May 23, 1933, and June 17, 1933. Though the fasting blood sugar was only 90.1 mgm. per 100 c.c., Dr. Ashe started the use of glucose subcutaneously and insulin intramuscularly on June 23, 1933, because of an apparent marked lack of resistance as shown by almost total lack of healing in the mastoid wound and repeated flare-ups in the chest pathology.

This was discontinued on June 30, 1933. The response was most satisfactory. The wound began to heal, vomiting ceased, and the general clinical picture improved greatly.

The child went on to complete recovery and the facial paralysis cleared. She has remained well since.

The blood Wasserman was negative. She had a mild secondary anemia and the white count varied from 18,000 to 25,000. The urine showed at one time 25 pus cells to the low power field.

Case 3. *Obstructive Atelectasis Due to Bronchial Compression by Peribronchial, Tubercular Glands.* A white male baby age 7 months was referred to us on January 10, 1931, with a diagnosis of foreign body. The X-ray plate was certainly suggestive of the same as there was a marked left obstructive atelectasis, with heart displaced to the left and secondarily "drowned lung." There was a marked decrease of breath sounds over all the left chest and a fluctuating temperature. The W. B. C. was 28,800 with polys 38%, lymphs 44%, large mono 14%, trans 4%.

Bronchoscopy with a No. 4 'scope showed only a swollen, obstructed bronchus from which some pus was aspirated. No foreign body was demonstrated. Having had a previous experience with primary bronchial diphtheria, we took a direct culture for Klebs-Loeffler bacilli. (None were found. A bronchoscopic specimen of pus was also negative for tubercle bacilli. The predominating organism was of the streptococcus group.) The right bronchus was normal.

There was considerable clearing of the lung following bronchoscopy with corresponding clinical improvement. However, with distinctly unilateral involvement, we felt this primarily obstructive with infection as a secondary factor. Suspecting tubercular peribronchial mediastinal glands with secondary compression, we asked for a tuberculin test. Much to our surprise this was reported as negative. Three pleural taps by our pediatric consultant yielded nothing.

During the next three months this child had recurring cycles of left obstructive atelectasis. Four subsequent bronchoscopies were done. No foreign body was ever demonstrated. At the last bronchoscopic examination on April 15, 1931, we could definitely demonstrate both tracheal and left bronchial compression. The child died shortly thereafter at the home of the parents and we were, therefore, unable to get an autopsy.

Nevertheless, we find two years later that the mother died in a county tuberculosis sanatorium with both lungs riddled with tuberculosis, as shown by X-ray, and a positive sputum. Consequently, despite the negative tuberculin reaction, we must view the obstruction in this case as due to compression by tubercular glands. The pulmonary infection secondary to the obstruction accounted for the leukocytosis.

We now consider other types of suppurative pneumonitis which are not primarily obstructive.

Case 4. *Diffuse, Acute Purulent Bronchitis with Secondary Basal Pneumonitis.* A male child, age 9 years was admitted on June 16, 1934, because of temperature and a productive cough. A year previously he had had a somewhat similar attack following measles. He had been well up until 3 weeks previously. Temperature on admission was 104° (m). The referring physician thought he had a bronchiectasis. Roentgenogram did show a mesial peribronchial density in the lower right lung. The ear, nose and throat examination was negative.

Bronchoscopy was done the same day using a No. 6 'scope. A quantity of very tenacious pus was aspirated from both main bronchi. (It would not run down the sides of an inverted specimen collector.) Pus was seen spouting from both upper and lower lobe bronchi on both sides. The bronchial mucosa was diffusely reddened and swollen. 5 cubic centimeters of gomenol were instilled.

The laboratory reported a pure culture of a small Gram-negative coccus (catarrhalis group). A dark field examination showed no fusiform bacilli or spirochetes. Culture on Sabourraud's media was negative. No tubercle bacilli were found.

The child was sent home shortly thereafter and treated as an outpatient. Eight subsequent bronchoscopies were done at intervals of 4 or 5 days with the instillation of oil. The temperature promptly came down by lysis and he has remained well since. Lung mapping after recovery showed no bronchiectasis. This type of case, neglected however, might easily develop a bronchiectasis. Clerf[9] has emphasized this prophylactic

treatment particularly following measles. Any residual sinus infection must also be treated.

Case 5. *Extension of Tuberculous Mediastinitis to the Parenchyma of the Lung by Direct Extension.* Although this child, a white girl, age 14 years, was only first seen by us March 8, 1933, thanks to Dr. P. P. McCain of the North Carolina Tuberculosis Sanatorium, who referred the patient, we have a complete clinical and roentgenographic record extending back 7 years. She had a positive intradermal tuberculin reaction (plus four with 1/1000 mgm.) with a bad family history. The past history consisted of intermittent cough, loss of weight, and periodic temperature. Repeated sputum examinations had been negative for tubercle bacilli.

At the time we saw her there was by X-ray, a marked circumscribed area of increased density in juxtaposition to the right mediastinum and apparently invading the upper lobe. This was sharply circumscribed.

Bronchoscopy at this time under local anesthesia showed some displacement inward of the right tracheal wall and marked fixation and compression of the right main stem bronchus; the left was normal. Pus was encountered in the right main bronchus and aspirated for study. Because of the distortion of structures and fixation, landmarks were ill defined. The laboratory report stated no spirochetes on dark field examination, no tubercle bacilli and on culture "pneumococcus and streptococcus predominate; also a Gram-negative diplococcus of the M. Catarrhalis type."

There was then unquestioned mediastinal pathology which we interpreted as a true tuberculosis of the mediastinum[10] with secondary invasion of the upper right lobe by direct extension. (We have demonstrated this type of invasion at autopsy in an adult with Hodgkin's disease). The duration of the case argued against either a Hodgkin's disease or malignancy.

Subsequently we aspirated pus from the right upper lobe. At her last bronchoscopy on August 17, 1933, there was no pus, and all evidence of tracheal and bronchial compression had disappeared. This surprising involution was confirmed by roentgenogram which showed marked clearing. At no time was deep X-ray therapy used that might account for this involution.

Here, bronchoscopy was probably only an incidental factor in her clinical improvement. Its chief value was diagnostic.

Case 6. *Pneumonitis Complicating Chronic Upper Respiratory Infection.* The patient was a white male, age 8 years, who was sent to our clinic on August 3, 1931, from the North Carolina Tuberculosis Sanatorium where they had made the diagnosis of either a pneumonitis or a bronchiectasis and advised bronchoscopic examination because X-ray showed a small circumscribed area of density at the outer border of the heart on the right side between the 4th and 6th ribs anteriorly.

The history was negative for either foreign body aspiration or any previous acute respiratory infection.

Examination disclosed a much underweight child with a chronic productive cough. There were very large, diseased tonsils. Sinus infection, if present, was overlooked at this time. There were rather loud and moist rales at both bases.

Bronchoscopy was carried out using a No. 6 'scope. Considerable pus was present in both sides of the bronchial tree. The left lower bronchus contained some thickened reddened tissue (probably secondary to contaminating pus from the right side as shown by subsequent bronchoscopies) from which a biopsy was done. We quote the pathological report: "It consists largely of a piece of cartilage with supporting connective tissue and contains one lobule of a mucous tubular gland. No malignancy, and no specific inflammatory infiltrates seen." The dark field was reported negative for spirochetes. Several examinations of bronchoscopically aspirated specimens were negative for tubercle bacilli. The Wasserman was negative.

After several bronchoscopies the pus was seen to be coming exclusively from the right middle lobe orifice. Lung mapping carried out bronchoscopically failed to show bronchiectasis of any extent.

On October 13, 1931, because of failure to respond to bronchoscopic treatment we referred him to Dr. James Gibbon who performed a phrenic exeresis. The child was apparently benefited by the same.

However, two years later we requested that the child be brought back for a follow-up examination. Bronchoscopy at this time still showed considerable pus coming from the right middle lobe. The left bronchus was normal.

He was underweight and had the same chronic productive cough. Roentgenogram showed the same area of circumscribed increased density just lateral to the heart shadow and between the 4th and 6th ribs anteriorly. Lung mapping was again carried out by using a rubber catheter inserted into the trachea under local anesthesia. 10 c.c. lipoiodine was then injected slowly with the patient leaned to the right and forward so as to get some filling of the right middle lobe. No appreciable bronchiectasis was demonstrated. There was some abnormal filling of the middle lobe corresponding to the area of density previously described which we interpreted as being due to a pneumonitis. It was hardly large enough for a cavity.

We then became suspicious that a source of infection had been overlooked. An X-ray of his sinuses showed both antra full of pus as proven by subsequent irrigation. Culture gave a pure growth of pneumococcus from the right antrum; the left was sterile.

A bilateral intranasal antrum was done under local anesthesia. Simple irrigation was continued. Later, also under local anesthesia, the tonsils were removed. Culture of these was reported as predominatingly a streptococcus.

A culture of a bronchoscopically aspirated specimen taken at this time was reported as follows: "Cultures show a mixed growth of streptococcus, a gram-negative coccus and a gram-negative bacillus. Gram-negative coccus overwhelmingly predominant in the lowered oxygen tension tube. This organism is a member of the catarrhalis-flavus-crassus group."

The antra were periodically irrigated but bronchoscopies stopped. For the first time in over two years protracted temperature charts kept at home showed the boy to be temperature free. Cough was less. There was some gain in weight.

At the end of the third year another bronchoscopy was done. There was still a small amount of thick pus coming from the right middle lobe orifice. It was not as much in amount.

Culture of a bronchoscopically aspirated specimen showed a pure culture of a gram-negative coccus which had predominated in the culture the previous year. This was considered therefore of pathologic significance and a vaccine was prepared and administered by the family physician.

On March 9, 1935, the child was again brought back for examination. The sinuses were clinically satisfactory. Bronchoscopy still showed pus from the right middle bronchus but less than it had ever been. Culture gave a pure growth of a Gram-negative coccus. Roentgenogram for the first time showed much lessening of the shadow.

There are interesting paradoxes here. The antrum gave a culture of pneumococcus. The bronchoscopic pus has consistently shown an organism of the micrococcus catarrhalis group. He became temperature free only after surgical treatment of upper respiratory foci. The chest, however, improved most after the use of an autogenous vaccine of the Gram-negative coccus. At the end of nearly 4 years he is still not completely well, but the outlook seems better.

Case 7. *Pneumonitis in Which the Onset Dates to Some Acute Respiratory Infection.* This patient is one of the most interesting in our whole series. She was a white female child age 3 years, first seen March 13, 1933. The X-ray plate showed a massive infiltration of the whole lower left lobe. There was no previous history of foreign body aspiration. The symptoms came on with gradually increasing severity following a supposed whooping cough. For the past few months she had had persistent productive cough, malaise, afternoon temperature, and recurrent vomiting.

She was obviously a very sick child and at once hospitalized. No sinus infection was clinically present. She had chronically diseased tonsils and adenoids. There was marked diminution of breath sounds and flatness over all of the left lower chest.

Suspecting an overlooked foreign body, bronchoscopy was done with a No. 4 'scope. None was found, but a quantity of foul pus was suctioned from the left lower lobe bronchus. This was repeated again in 6 days with a No. 4 'scope and foreign body again carefully excluded. However, there

was some laryngeal reaction from both procedures. We then began to use a 3½ mm. 'scope purely for purposes of aspiration followed by instillation of 2 c.c. of monochlorphenol. Working time was restricted to 3 or 4 minutes. With this technique there was no reaction and we could carry out bronchoscopy every 2 or 3 days. An afternoon temperature of 104° to 105°F. (R) began to steadily decline. Vomiting ceased. At the end of four weeks she was discharged from the hospital, though still running an afternoon temperature of 99° to 100°F. (R).

The laboratory report on a bronchoscopic specimen of pus showed no spirochetes on dark field examination, and no tubercle bacilli. Culture showed a Gram-negative diplococcus, a few pneumococci, and streptococci. Blood count showed a typical secondary anemia with a W. B. C. of 25,000 with 60% polymorphonuclears.

She was then treated as an outpatient with two bronchoscopies weekly. After 50 bronchoscopies, we had reached a stalemate. The lung had cleared roentgenologically. 5 c.c. of lipoiodine instilled into the left bronchus failed to show any bronchiectasis. Still, at each bronchoscopy probably an ounce of pus was suctioned from the tracheobronchial tree, and always largely from the left side. She continued to run a slight afternoon temperature. At this stage we sought surgical consultation and asked Dr. Thomas Sparrow to see her. He advised a left phrenic exeresis which was done under local anesthesia. There were no untoward symptoms and subsequent bronchoscopies showed a definite reduction in the amount of pus.

After 65 bronchoscopies, we had again reached somewhat of a stalemate. There was still a small amount of residual thick pus and occasional slight elevations of afternoon temperature. At this stage we sought the aid of the surgeon once more. Dr. Sparrow introduced approximately 100 c.c. of air into the left pleural cavity with no ill effects on the following dates: December 18, 1933; January 1, 8 and 14, 1934. During this period no bronchoscopies were done.

The final bronchoscopy was done on March 20, 1934. For the first time there was no pus whatsoever and the bronchial tree on the left was entirely normal. Roentgenogram showed the left lung had completely re-expanded, and a residual high left diaphragm due to her previous phrenic operation. The lung fields were altogether negative. The temperature had been normal for several weeks. She was therefore discharged as cured. She has remained well.

In sequence we consider a pneumonitis which has progressed to cavity formation, i.e., lung abscess. A priori, on stereoscopic films we should be able to outline a cavity or cavities, or demonstrate a fluid level fluoroscopically. The mode of onset of lung abscess is still a debated question. Is it embolic? Is it due to aspiration of infectious material? Are both factors?

As to emboli, Holman[11] has produced, experimentally, abscess by the use of sterile emboli. Clerf[12] mentions the work of Van Allen and his co-workers as follows: that they showed the chronicity and virulence of embolic abscess is enhanced by the insufflation of infectious material; that an embolic abscess is more likely because such lowers the blood supply of the very vascular lung to a level of other tissues; that an abscess develops more rapidly from embolus than by intra-bronchial inoculation; and that lung tissue normally seems more resistant to necrosis and suppuration than other tissues.

The postoperative abscess occurring most frequently, and the one especially interesting to both otolaryngologists and pediatricians, is the post-tonsillatomic. Curiously enough this is infrequent in the first decade. Flick[13] and his co-workers reported only 6.4% of 172 cases of varied etiology in this period. One-half the cases occurred between 20 and 40 years. Clerf[14] analyzed 77 of his own cases of post-tonsillatomic abscess and reported 65% occurring between 20 and 40 years. In only four cases was local anesthesia used.

These facts are corroborated in our own experience. In 4,028 patients operated on in our clinic under general anesthesia in the past eight years, over 90% of whom were children, not a case of lung abscess has come to our attention. Moreover, we try to make a follow-up examination of every patient within one week of operation. We have no case in our files of lung abscess complicating tonsillectomy under local anesthesia.

Moreover, the few cases of post-tonsillatomic abscess we have seen in bronchoscopic consultation in recent years were all 20 years or older and never seen in what might be the stage of infarct before breakdown. Thus last year I saw a 20-year-old girl with multiple cavitation of the left upper lobe 3 weeks after tonsillectomy under ether anesthesia. (She recovered completely with bronchoscopic management. Arsenic was also given intramuscularly because fusiform bacilli were present in the bronchoscopic pus.)

These clinical observations suggest the importance of the inhalation type of infection rather than the embolic because: 1. The great majority occur after general anesthesia. 2. They occur at a period of life when much deeper anesthesia is required than in small children. In these latter we can operate rapidly under light anesthesia with relatively little hemorrhage. All otolaryngologists know the reverse is usually true in operating on an adult under general anesthesia.

On the other hand, if an aspiration affair, why does breakdown of tissue apparently occur so rapidly? Would such be so with purely an inflammatory lesion? Why are other inflammatory lesions so much slower to break down? All of which would argue for the embolic theory.

Since we do not have a post-tonsillatomic lung abscess in the strict use of the phrase, i.e., true cavity formation, in a child under ten years of

age, I may with propriety interpolate a case here which shows the difficulties of exact diagnosis sometimes met. Moreover, this is supposed to be a practical paper, and the patient well demonstrates the value of early bronchoscopic drainage in these cases. We should not let academic considerations obscure the best interests of the patient. Perhaps it would be best to divide this group into postoperative pneumonitis and postoperative abscess depending on the stage.

Case 8. *Post-tonsillatomic Lung Suppuration.* A white girl age 7 years was admitted to the hospital on June 10, 1933 because of cough, temperature of 102°F. (m) and prostration. She had had a tonsillectomy and adenoidectomy 2 weeks previously. Her roentgenogram, curiously enough, was essentially negative. Unfortunately a lateral plate was not taken. At bronchoscopy, however, foul smelling pus was aspirated from the left upper lobe orifice. She made a complete and permanent recovery following six bronchoscopic aspirations carried out every 2 to 4 days with the installation of monochlorphenol. All were done with a No. 5 'scope.

I add one last thought to this phase in children. Careful observation for a lung infarct in a child was rewarded not long ago. We had a boy age 6 years who developed bilateral mastoiditis following measles for which he was operated on by my associate, Dr. F. E. Motley. In the course of convalescence a sudden flare of temperature raised the question of a lateral sinus infection. There were also some vague chest signs. An X-ray of the chest showed a sharply circumscribed area of density in the periphery of the right lung. A blood culture was positive for a gram-positive micrococcus which we were not able to definitely identify. However, the chest pathology underwent spontaneous resolution with no particular treatment and the patient went on to complete recovery. A picture of this chest is shown in the accompanying photographs. (See Plate 25.)

We may now consider other types of lung abscess.

Case 9. *Postpneumonic Lung Abscess.* This patient was a female white child, age 6 years, who was referred to us on December 3, 1930. Roentgenogram showed a frank abscess cavity of the left upper lobe with some increase in density of the left lower lobe. (The latter proved later to be secondary due to the gravitation of the pus from above into this area.) The chronicity of the infection was indicated by marked clubbing of the fingers.

Ten months previously she had whooping cough followed by pneumonia. Since then, productive cough with odor, loss of weight, and intermittent temperature had persisted to date.

Bronchoscopy with a No. 5 'scope showed much ill smelling pus coming from the left upper lobe. This was suctioned off and 10 c.c. of gomenol instilled. A bronchoscopic specimen was negative for tubercular organisms. This procedure was carried out seven times with complete and permanent clinical recovery.

Case 10. *Abscess Complicating Diabetes.* This case is also reported because of its unusual clinical interest. The child had been in diabetic coma three times. He is still living and free of chest symptoms.

A male white child age 9 years was seen with Dr. E. J. Wannamaker, internist, on May 3, 1933, because of cough and temperature. The child was a high grade diabetic with a blood sugar which had been as high as 466 mgm. per 100 c.c. The ear, nose and throat examination was negative. At the right base there were diminished breath sounds, bronchophony, egophony and dullness. Roentgenogram showed a marked increased area of density of the right lower lobe. Whether this pneumonitis was complicated by an abscess cavity could not be definitely determined at this time. Pleural puncture had yielded negative findings.

Bronchoscopy with a No. 5 'scope showed frank pus from the right lower lobe bronchus. An abscess cavity was demonstrable after the first bronchoscopy. Complete recovery followed five bronchoscopies with the instillation of a few c.c. of monochlorphenol each time.

Culture of bronchoscopically aspirated pus was reported as staphylococcus albus; and was negative for tubercle bacilli. A dark field examination was negative for spirochetes, but did show some yeast cells. Culture on Sabourraud's media gave no growth.

During this treatment he was of course under rigid diabetic management by Dr. Wannamaker.

4. *Bronchiectasis Secondary to Neglected Foreign Body.* We have shown by lung mappings that a multiple bronchiectasis does occur in these cases and sometimes despite every conservative measure to prevent it. In fact, we have seen no proven bronchiectasis in childhood except from this cause. However, we are covering this phase of the subject in another paper to be published shortly and mention it here just to complete the outline.

SUMMARY AND CONCLUSION:

An outline of the chest pathology of infancy and childhood has been suggested. Foreign body was excluded as a primary consideration because much has already been written on the same. Otherwise the classification followed offers a broad working basis from a standpoint of clinical pathology. Discussions and illustrative cases were given in sequence under related headings. An effort was made to attain two objectives: 1. To correlate the whole subject in one paper for those interested. 2. To show the wide range of the diagnostic and therapeutic value of bronchoscopy and its safety under carefully controlled conditions.

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LEGENDS FOR PHOTOGRAPHS

Figure I—Radiograph of gross autopsy specimen of congenital tracheoesophageal specimen. Lungs have been injected with lipiodol. *A*. Probe through larynx and trachea to the bifurcation. *B*. Blind pouch of upper esophageal segment injected with barium. *C*. Lower esophageal segment injected with barium and connecting with trachea.

Figure II—Congenital stenosis of bronchi to upper left lobe in 2 months old baby. Marked emphysema (trapped air) of this lobe, displacing heart and mediastinal structures to right. Lower left lobe was shown at autopsy to be atelectatic. (Roengenogram reproduced through courtesy Dr. C. C. Phillips, Charlotte Sanatorium.)

Figure III—Case 1. Obstructive atelectasis of right lower lobe in 7 year old girl. Followed tonsillectomy 2 months previously.

Figure IV—Case 1. Same patient shortly after one bronchoscopic aspiration of pus from right lower bronchus. No further treatment was necessary.

Figure V—Case 2. Female child 2 years old with beginning obstructive atelectasis complicating pneumonia. Note displacement of heart to left. Thick pus was aspirated from the left bronchus.

Figure VI—Case 2. End result in same patient after bronchoscopic treatment.

Figure VII—Case 2. Temperature chart of same patient. This was purposely taken at a time when no other major therapy was being done.

Figure VIII—Case 3. Obstructive atelectasis left in 7 months old baby. Bronchoscopy showed only bronchial compression on the left with secondary infection.

FIGURE IX—Case 3. Same patient. Some improvement after bronchoscopic aspiration. The atelectasis recurred. End result: death. Cause probably tubercular peribronchial glands. Mother died 2 years later of proven tuberculosis.

FIGURE X—Case 4. Basal pneumonitis right in 9 year old boy. Bronchoscopy showed a diffuse purulent bronchitis. Pneumonitis therefore probably secondary.

FIRURE XI—Case 4. Same patient after bronchoscopic treatment. Pneumonitis has cleared. Lipoidine has been instilled through bronchoscope (10 c.c. each side.) No bronchiectasis is shown.

FIGURE XII—Case 4. Temperature chart of same patient showing favorable response to bronchoscopy.

FIGURE XIII—Case 5. Girl age 8 years. Cone shaped shadow extending from right border of mediastinum into mesial aspect of right upper lobe. Taken 9/2/27. Positive intradermal tuberculin test of 1/1000 mgm. (Courtesy Dr. P. P. McCain, North Carolina Tuberculosis Sanatorium.)

FIGURE XIV—Case 5. Same patient. Radiograph taken 9/20/30. Note extension of pathology. (Courtesy Dr. P. P. McCain, North Carolina Tuberculosis Sanatorium.)

FIGURE XV—Case 5. Same patient. Film of 3/27/31. Note sharp demarcation of shadow on right side. (Courtesy of Dr. P. P. McCain, North Carolina Tuberculosis Sanatorium.)

FIGURE XVI—Case 5. Same patient now 14 years of age. Our film taken 5/8/33. Bronchoscopy strongly suggested mediastinal pathology and showed pus from right upper lobe. We felt upper lobe secondarily involved by direct extension of a tuberculous mediastinitis. No tubercle bacilli found, however.

FIGURE XVII—Case 5. Same patient. Shows clearing of upper lobe and marked involution of mediastinal pathology 6 years after onset. Bronchoscopic study confirmed these findings. She has remained afebrile and sympton free for one year now.

FIGURE XVIII—Case 6. Male, age 8 years. Heavy hilus shadows but note in addition circumscribed area of density to right heart border between 5th and 6th ribs anteriorly. Probably represents a pneumonitis. Bronchoscopy showed pus from right middle lobe.

FIGURE XIX—Case 6. Same patient. A phrenic was done previously. Hence high diaphragm right. Lipoidine has also been instilled by cathether in trachea with patient leaned to right and forward to get some filling of middle lobe. No bronchiectasis is shown.

FIGURE XX.—Case 6. Sinus plate of same patient. Note marked involvement of antra. This was overlooked for 2 years. Became tempearture free only after drainage was established.

FIGURE XXI—Case 7. Female child, age 3 years. Note extensive pneumonitis left base. Only antecedent factor obtained was whooping cough.

FIGURE XXII—Case 7. Same patient showing end result of bronchoscopic treatment. The pneumonitis has cleared. There is left only some abnormal accentuation of the lower left bronchial markings.

FIGURE XXIII—Case 7. Same patient after injection of lipoidine into left side through the bronchoscope. This was done because there was still slight elevation of afternoon temperature and small amount of pus from left lower bronchus despite 50 bronchoscopies. No bronchiectasis is shown. This residual pathology was finally controlled by pneumothorax. Result: recovery.

FIGURE XXIV—Case 7. Temperature chart of same patient showing favorable response to bronchoscopic aspiration. Arrows indicate the time of each bronchoscopy.

FIGURE XXV—X-ray of six year old boy with bilateral postmeasles mastoiditis. Taken postoperatively during recrudescence of temperature. Blood culture positive. Probably represents an infract. Note sharply circumscribed increased area of density in periphery of right upper lobe. Result: spontaneous resolution.

FIGURE XVI—Case 9. Girl, age 6 years. Postpneumonic abscess of left upper lobe Duration 14 months. Secondary pneumonitis of left base.

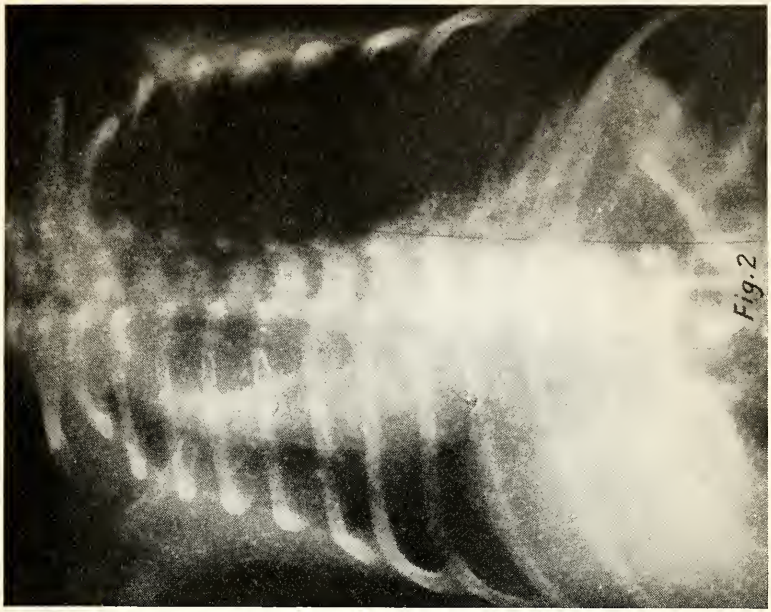
FIGURE XXVII—Case 9. Clubbing of fingers in same patient showing chronicity of process.

FIGURE XXVIII—Case 9. Same patient showing end result after 7 bronchoscopic aspirations. Clinically she has remained well for four years. Slight residual thickening of pleurae on left.

FIGURE XXIX—Case 10. Boy, age 9 years. High grade diabetic. Extensive pneumonitis on right side of indefinite limitations.

FIGURE XXX—Case 10. Same patient. Plate after one bronchoscopic aspiration of much pus from right bronchus. Apparent abscess now visible.

FIGURE XXXI—Case 10. End result on same patient after 5 bronchoscopic aspirations. The assymetry of right costophrenic angle is probably due to adherent and thickened pleurae. He has remained free of chest signs for 2 years.



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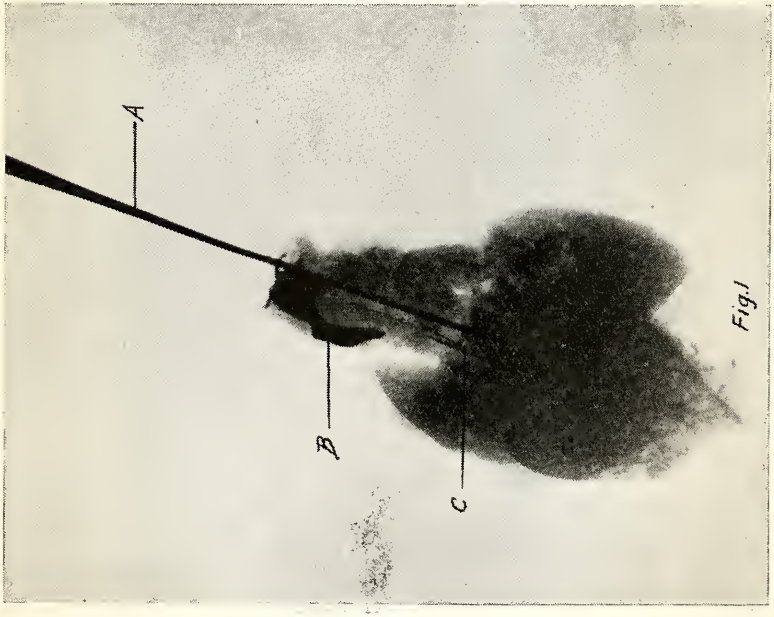

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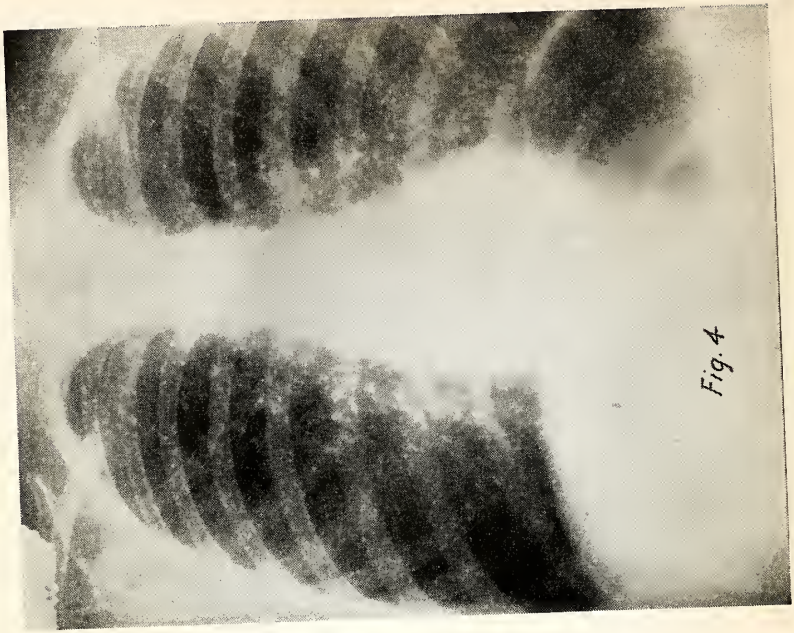

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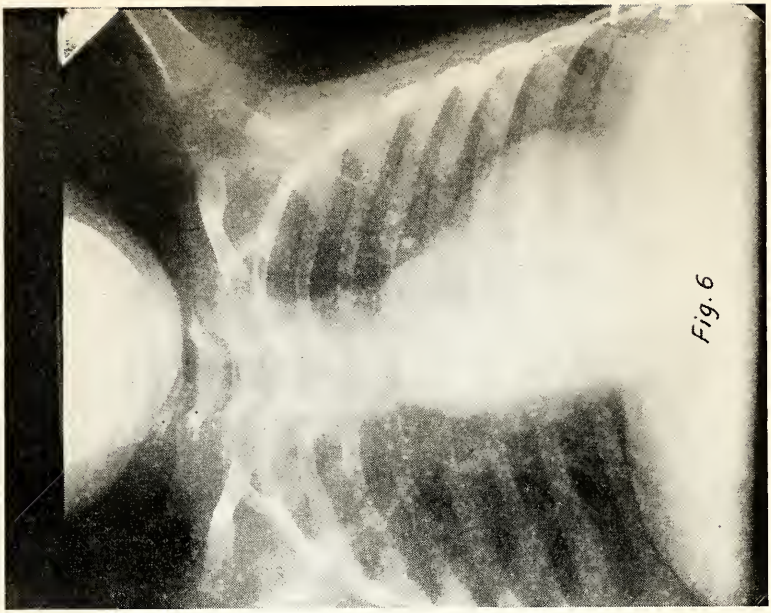

Fig. 6

See page 174 for description

Fig. 5

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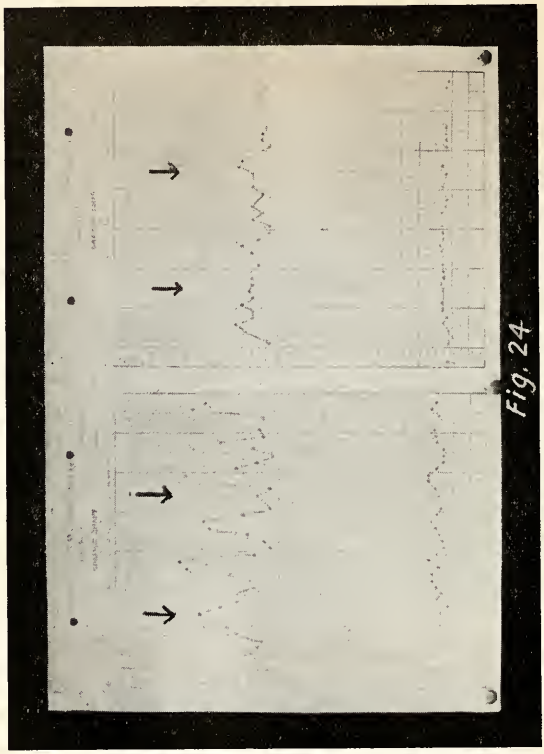

Fig. 24

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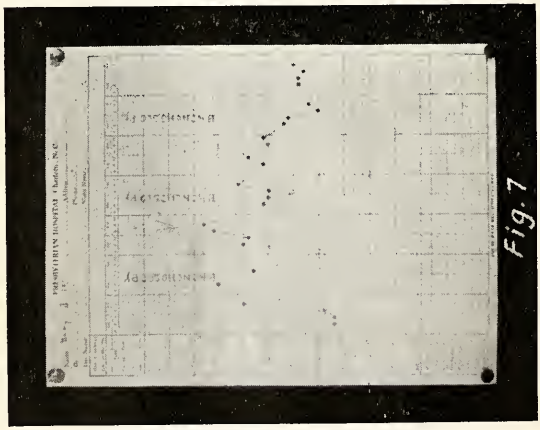

Fig. 7

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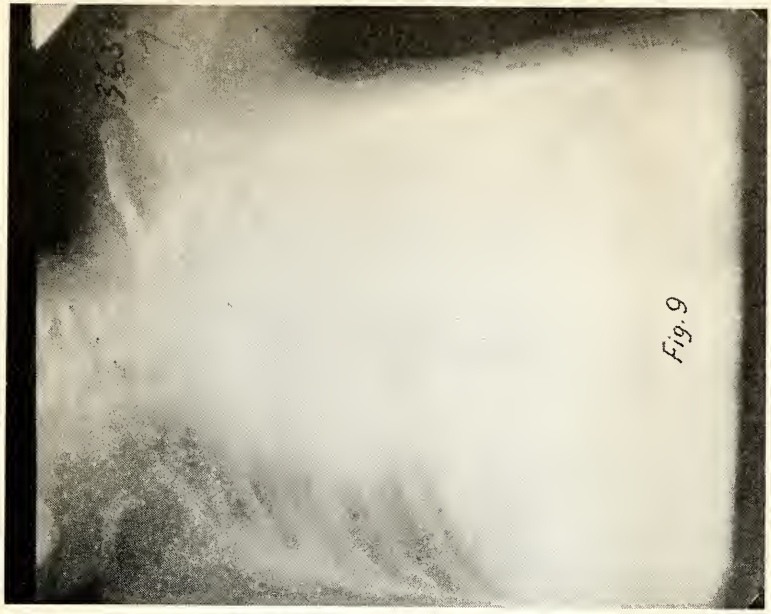

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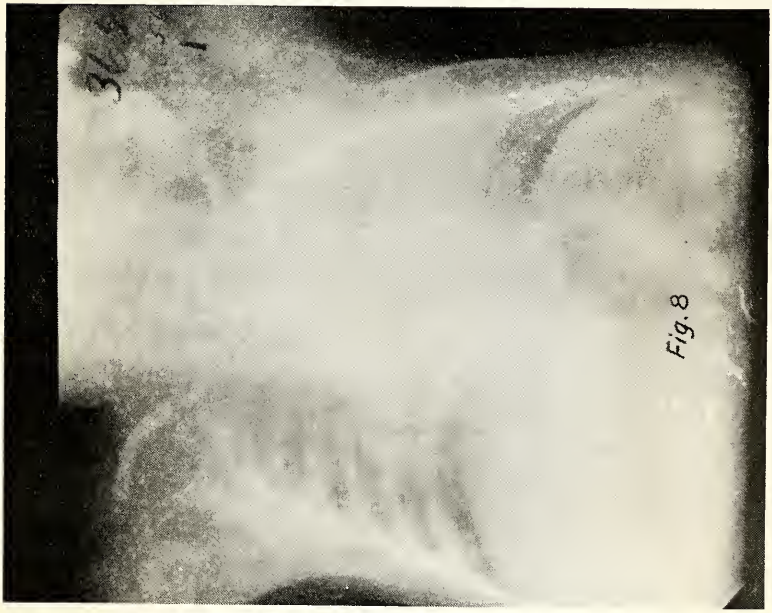

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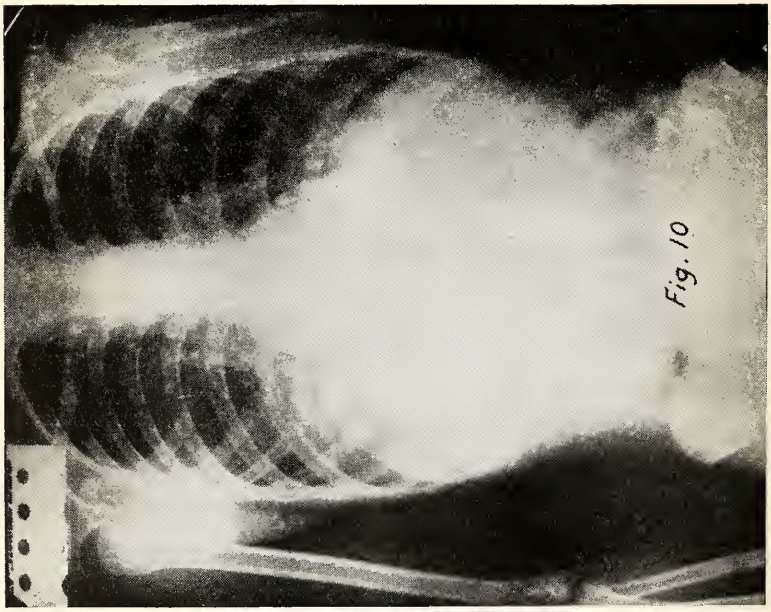

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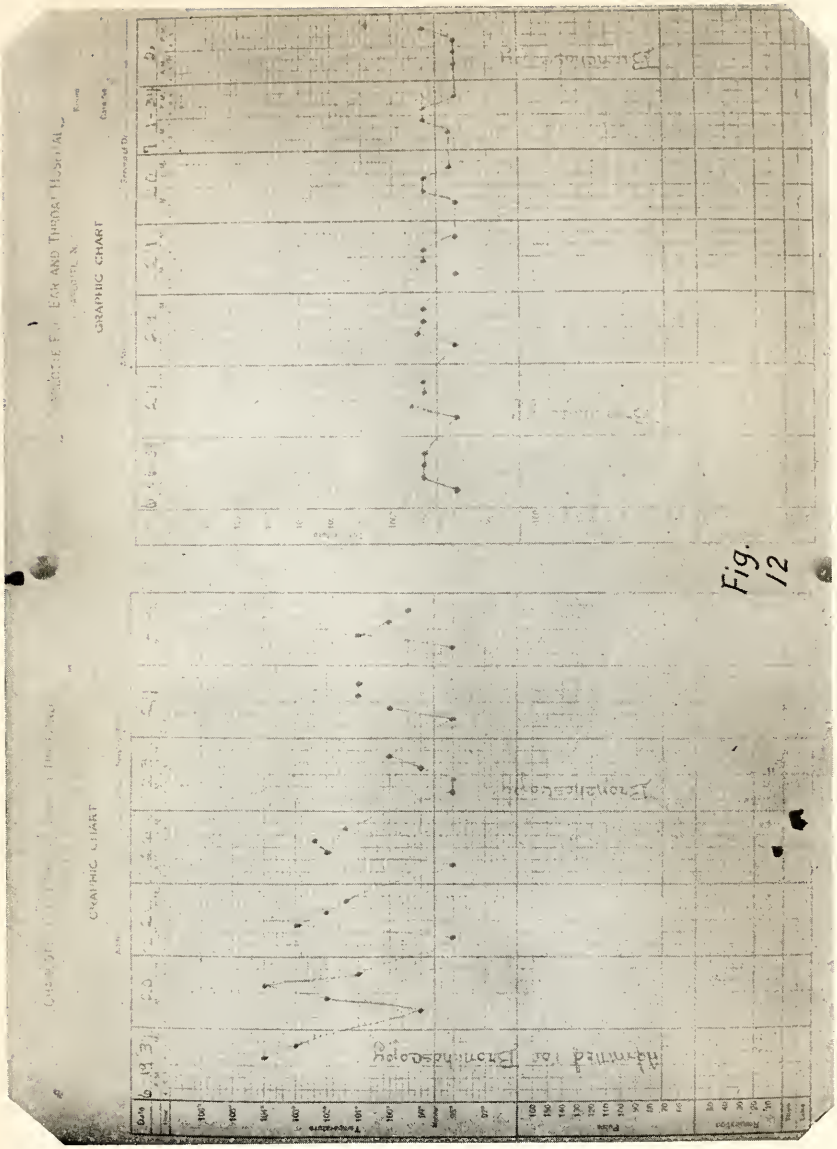

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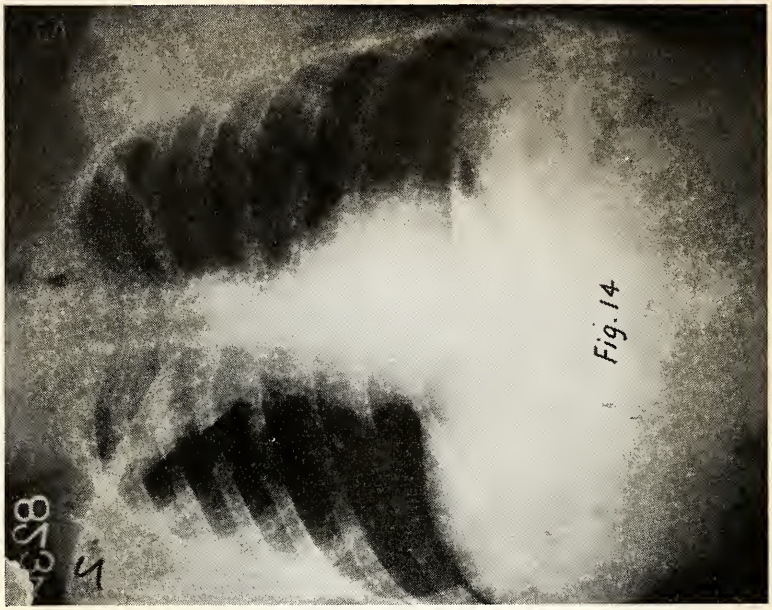

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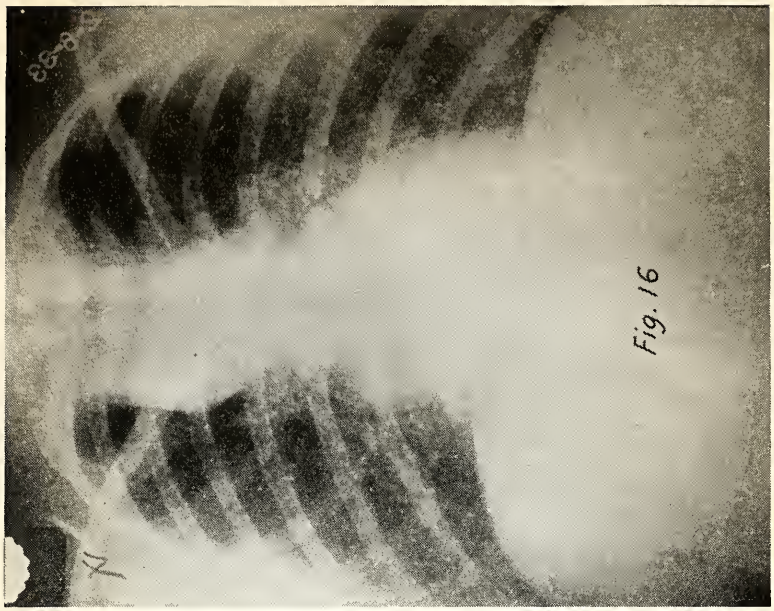

Fig. 16

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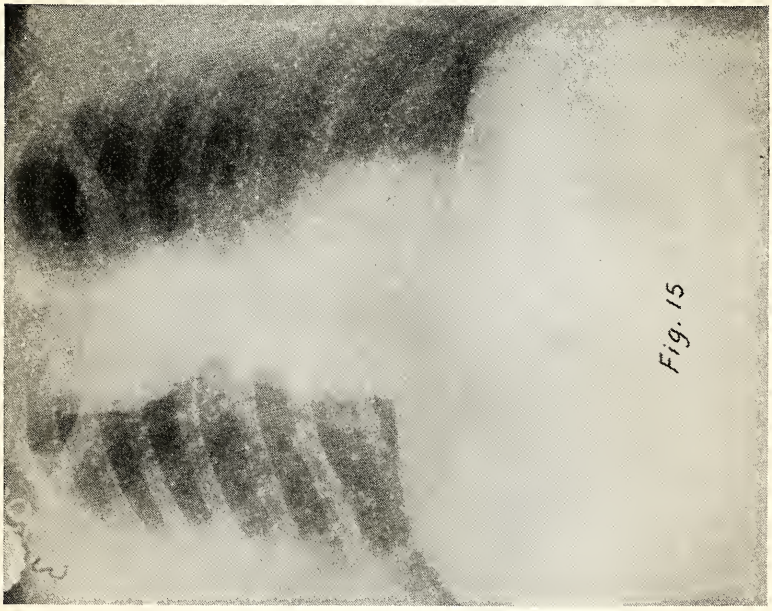

Fig. 15

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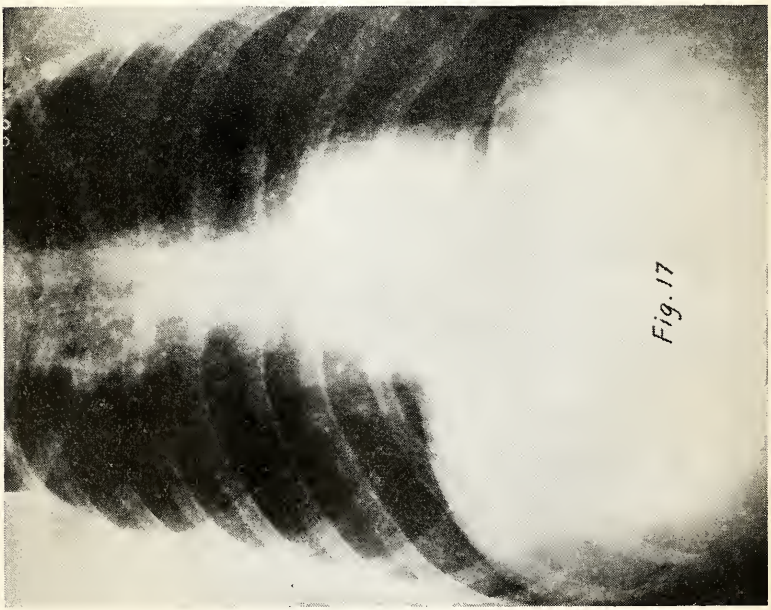

Fig. 17

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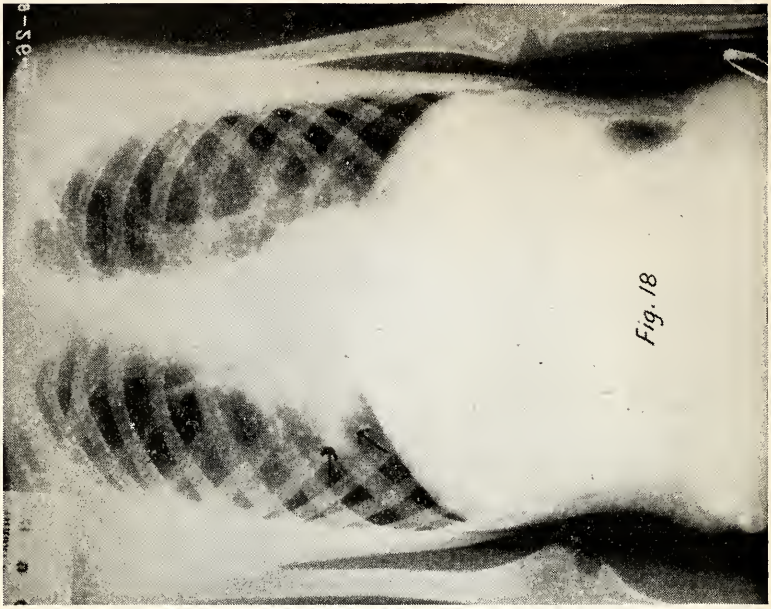

Fig. 18

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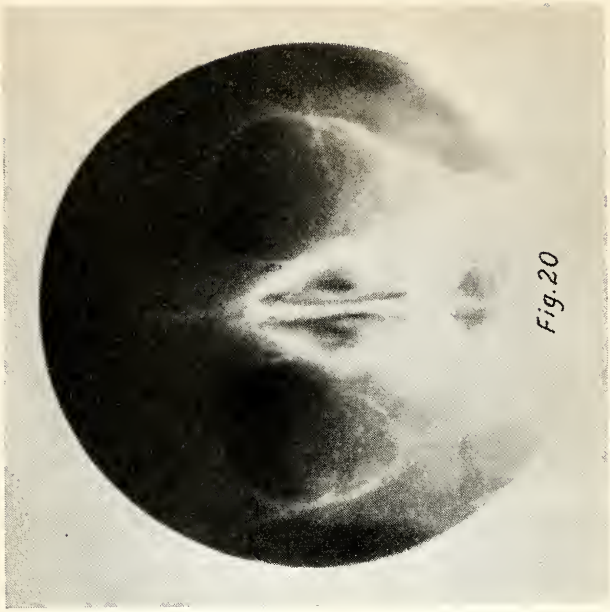

Fig. 20

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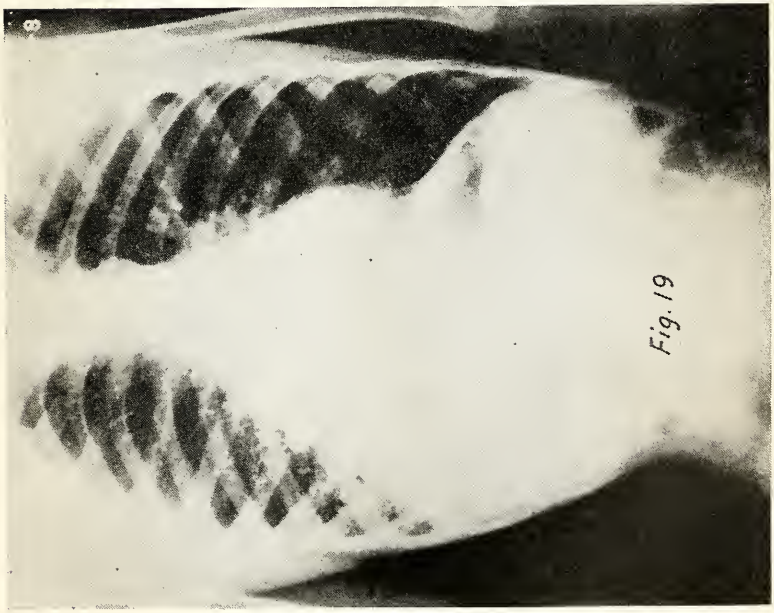

Fig. 19

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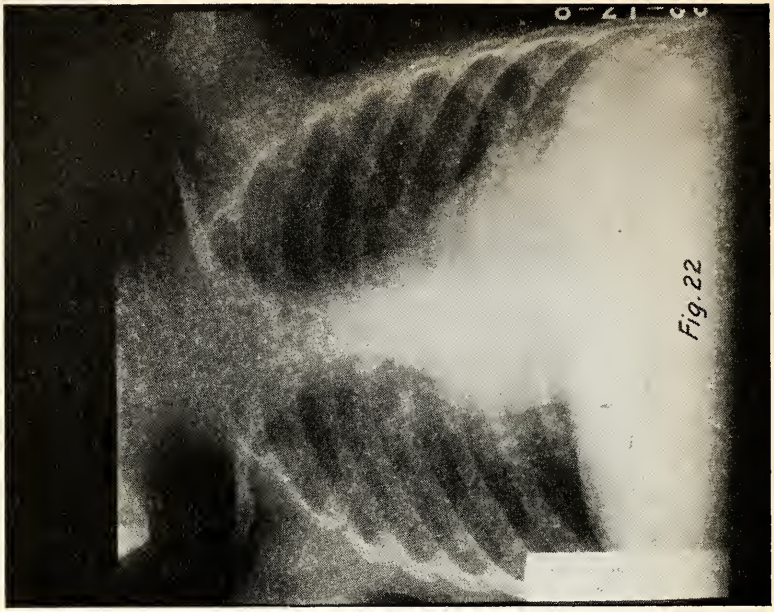

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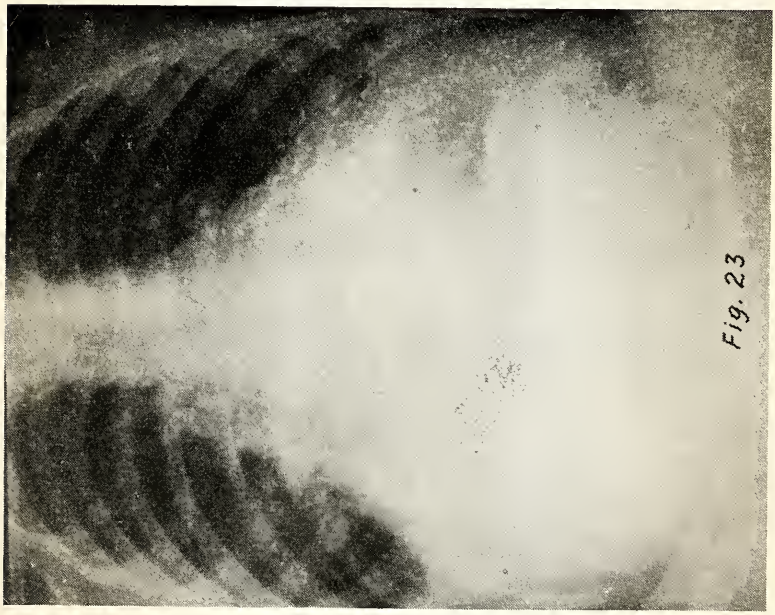

Fig. 23

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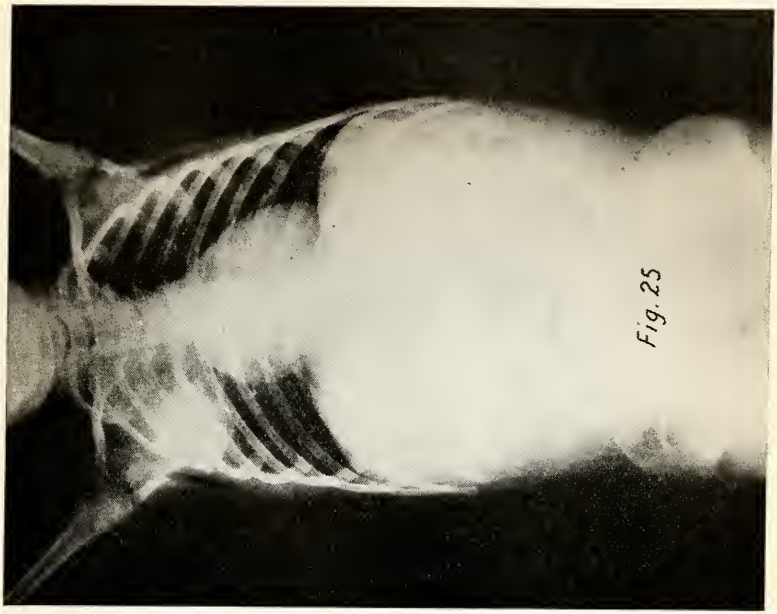

Fig. 25

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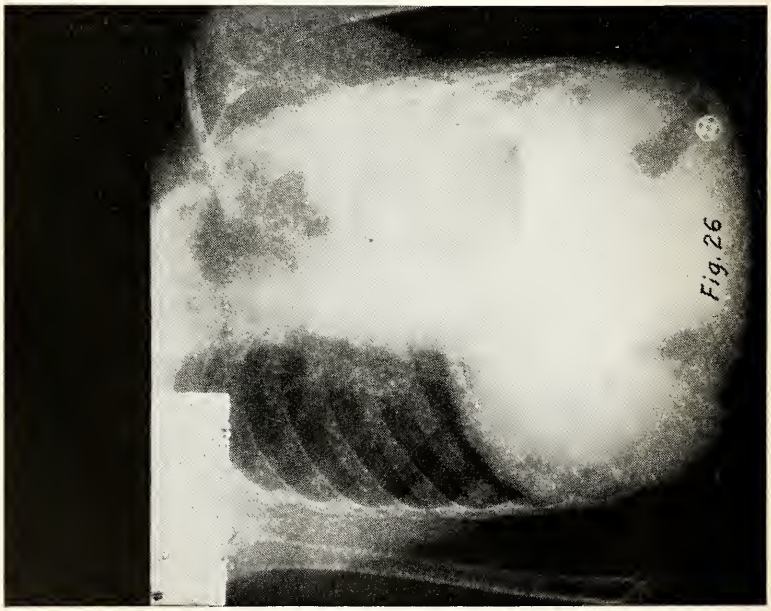

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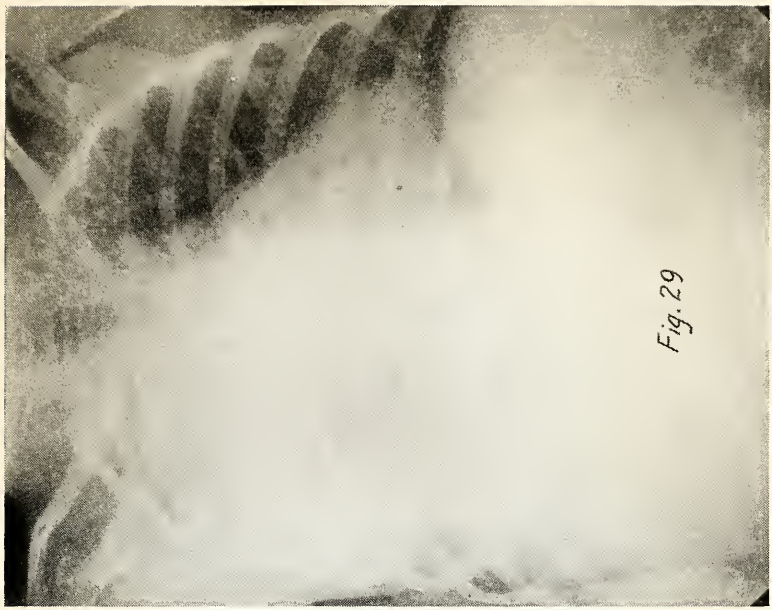

Fig. 29

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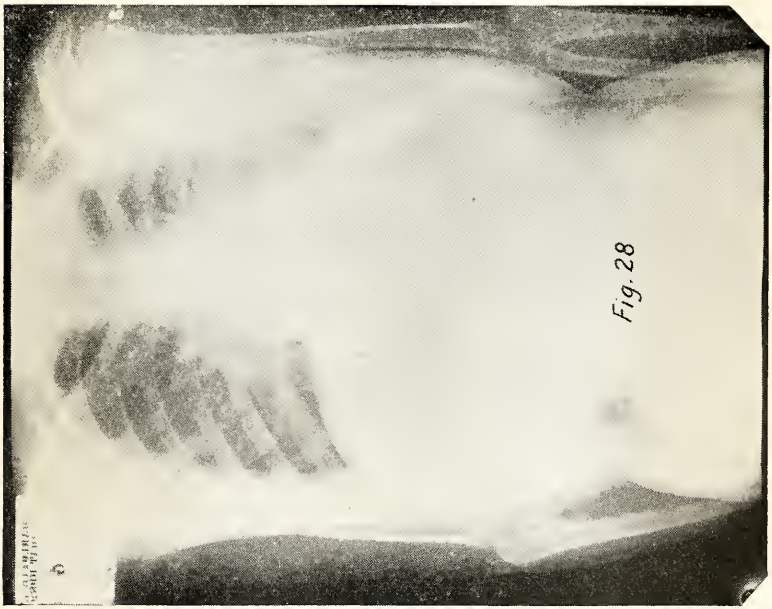

Fig. 28

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Fig. 31

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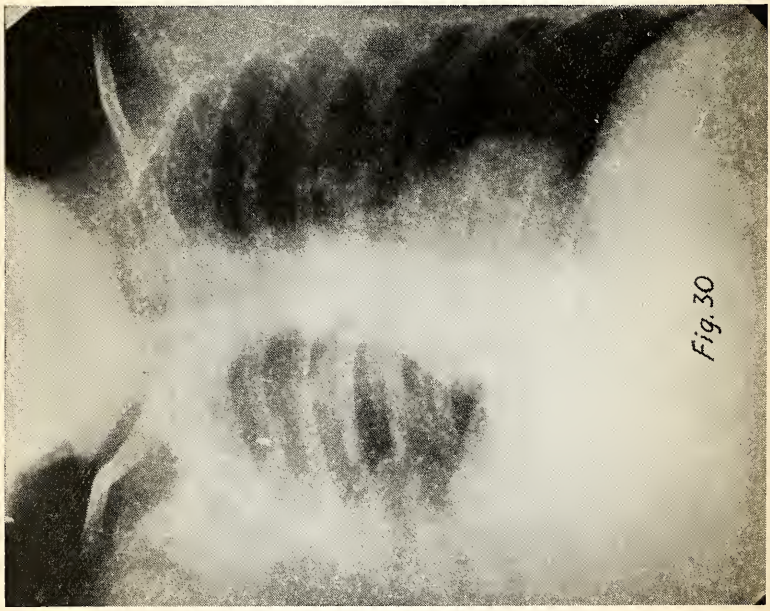


Fig. 30

See page 176 for description

BOARD OF MEDICAL EXAMINERS

OF THE

STATE OF NORTH CAROLINA

1932-1938

. . . Following Dr. Hart's paper the President announced the next order of business as the election of two members of the State Board of Health for a term of four years to succeed Dr. G. G. Dixon of Ayden and Dr. C. V. Reynolds of Asheville and Raleigh, whose terms had expired. Dr. Reynolds, who had just been elected State Health Officer and Secretary of the State Board of Health, was not eligible for re-election.

. . . The President called for nominations and the following names were placed in nomination: Dr. G. G. Dixon of Ayden, Dr. C. W. Banner of Greensboro and Dr. J. LaBruce Ward of Asheville. A ballot was had and the tellers reported that Dr. G. G. Dixon and Dr. J. LaBruce Ward had received a majority of all the votes cast, therefore the President declared Dr. G. G. Dixon and Dr. J. LaBruce Ward elected as members of the State Board of Health for a term of four years.

The next order of business was the meeting of the Conjoint Session of the Medical Society of the State of North Carolina with the State Board of Health. President McCain called Dr. S. D. Craig, President of the State Board of Health, to the chair.

FOURTH GENERAL SESSION

5 P. M., MAY 8, WEST PARLOR

DR. P. P. MCCAIN, *President,* in the Chair

. . . The report of the House of Delegates (see 2nd session) was presented and unanimously adopted.

. . . The report of the State Board of Medical Examiners was presented by Dr. B. J. Lawrence, Secretary, and approved.

Pinehurst, N. C., May 7, 1935.

To the North Carolina State Medical Society—Mr. President:

As Secretary of the Board of Medical Examiners I have been askel to present the following brief resume of our activities during the year. At our June meeting, 1934, we licensed twenty-six candidates by endorsement of their credentials. One hundred and thirty-one candidates registered to take the examinations.

At a call meeting of the Board held in Morehead City, N. C., July 21, 1934, two candidates were licensed by endorsement of their credentials. Seventy-eight candidates were licensed upon the successful passage of all examinations.

Under and by the authority of a special resolution of the Board in September, 1934, one candidate was licensed by endorsement of his credentials. At the regular mid-winter meeting of the Board, held in Raleigh on December 3, 1934, twenty-four candidates were licensed by endorsement of their credentials.

The case of Dr. J. H. Hemmingway upon the recommendation of a special committee was dismissed. At the same meeting we restored the license of Dr. J. H. Hudson of Pitt County upon the recommendation of the Pitt County Medical Society and upon other evidence satisfactory to the Board. The Board has not revoked the license of any practitioner during the past year.

At the December meeting the Board ordered and directed the Secretary to prepare and submit to the Legislature a bill which would change the word "shall" in Section No. 6609 of the Practice Act to "may." The bill was passed and ratified.

The next meeting of the Board of Examiners is set for June 10, 9 A. M., at the Sir Walter Hotel, Raleigh, N. C. Attached to this report is a list of candidates who have been licensed during the past year.

All of the Board as elected at the Winston-Salem meeting are still active. Dr. Ben F. Royal, of Morehead City, N. C., is President for this year. Other members of the Board at this time are: Dr. K. G. Averitt, Fayetteville, N. C., Dr. F. Webb Griffith, Asheville, N. C., Dr. Hamilton W. McKay, Charlotte, N. C., Dr. William H. Smith, Goldsboro, N. C., Dr. James W. Vernon, Morganton, N. C., and Dr. Benj. J. Lawrence, Raleigh, N. C., Secretary and Treasurer.

Respectfully submitted,
BENJ. J. LAWRENCE, M.D., *Secretary.*

DOCTORS LICENSED JUNE EXAMINATION, 1934, AND DECEMBER 3RD., 1934, AND UP TO DATE

Dr. Francis Marion Davis, Farmville, N. C.
Dr. Joseph Walter Neal, Jr., Greensboro, N. C.
Dr. Carroll Bracey Robertson, Petersburg, Va.
Dr. John Ramsey Harrison, Greer, S. C.
Dr. Francis W. Porro, Durham, N. C.
Dr. William Lee Ballenger, Atlanta, Ga.
Dr. Parley Martin Dings, Tellico Plains, Tenn.
Dr. Robert Jewett Jenkins, Col., Gainesville, Ga.
Dr. Bryan Watkins Whitfield, Murphy, N. C.
Dr. James P. Wade, Col., Raleigh, N. C.
Dr. Donald Roderick Insley, Rochester, N. Y.
Dr. Emil Bogomir Cekada, Watts Hospital, Durham, N. C.
Dr. Madison Edward Parrish, Newberry, S. C.
Dr. Ned Carroll Watts, Pinehurst, N. C.
Dr. Lester B. McDonald, Chicago, Ill.
Dr. Frederick Oliver Fay, Richmond, Va.
Dr. James Murrary Washburn, Lake Lure, N. C.
Dr. Harry Wilson Goswick, Jr., Winston-Salem, N. C.
Dr. Oscar Wm. Cranz, James Walker Memorial Hospital, Wilmington, N. C.
Dr. Samuel Harry Justa, Macclesfield, N. C.
Dr. John Hole Mickley, Tabor, N. C.
Dr. Ernest D. Vanderburg, Arden, N. C.
Dr. Fred Oscar Trotter, Henderson, N. C., R. 3.

Dr. Perry Davis Priest, Donelson, Tenn.
Dr. William Mathews Long, Statesville, N. C.
Dr. Edith Adele Goodwin, (F) Morganton, N. C.
Dr. Chase Taylor, Washington, D. C.
Dr. Charles Thomas Lawrence, Jr., Raleigh, N. C.
Dr. Richard H. Whitaker, Oak Ridge, N. C.
Dr. Howard Q. L. Little, Conover, N. C.
Dr. Cleon Walton Goodwin, Oriental, N. C.
Dr. Edward Leon Roberson, Tarboro, N. C.
Dr. Fletcher Dover Sain, Lawndale, N. C.
Dr. Clyde Russell Brown, Woodland, N. C.
Dr. Hight C. Warwick, Orrum, N. C.
Dr. Wm. Elledge Sellby, Belmont, Miss.
Dr. Charles Roscoe Farabee, Lexington, N. C.
Dr. George Parrott Rosemord, Kinston, N. C.
Dr. George Frederick Bain, 3rd, Asheville, N. C.
Dr. Roy Elias Kinsey, Coinjack, N. C.
Dr. Roy M. Smith, Greensboro, N. C.
Dr. Frank T. Harper, Jr., Kinston, N. C.
Dr. W. R. Beach, Jr., Clinton, N. C.
Dr. Mary F. Shuford, (F) Belmont, N. C.
Dr. Oscar A. Kaper, Edward, N. C.
Dr. Wm. Nicholas Fortescue, Scranton, N. C.
Dr. Herman Faber, Weldon, N. C.
Dr. John McKamie Harry, Harrisburg, N. C.
Dr. Ralph Juson Sykes, Jackson, N. C.
Dr. Troy E. Martin, Stonesville, N. C.
Dr. Herbert Flake Readling, Cornelius, N .C.
Dr. Charles F. Williams, Raleigh, N. C.
Dr. Joseph E. Slate, High Point, N. C.
Dr. Theodore McBeachy Northrop, St. Pauls, N. C.
Dr. Thomas L. Umphlet, Edenton, N. C.
Dr. Wilbur Curtis Hunsucker, Gibson, N. C.
Dr. Alfred E. Hammond, Jr., Pollocksville, N. C.
Dr. John T. Thornton, Greensboro, N. C.
Dr. Roger Atkinson Way, Atlantic City, N. J.
Dr. Michael Bolus, Wake Forest, N. C.
Dr. Gaston Frank Johnson, St. Pauls, N. C.
Dr. Andrew DeVal Taylor, Charlotte, N. C.
Dr. Benj. Hackett Harding, Yadkinville, N. C.
Dr. Henry W. Deitz, Hickory, N. C., R. 1.
Dr. Irma C. Henderson, (F) Asheville, N. C., R. 4.
Dr. Douglas H. Sprunt, Duke Hospital, Durham, N. C.
Dr. Wm. Alexander Cleveland, Col., Hickory, N. C.
Dr. John Chas. Jordan, Jr. Col. Freeman's Hospital, Washington, D. C.
Dr. Roger Irving Wall, Wendell, N. C.
Dr. Joseph H. Meadows, Oxford, N. C., R. 1.
Dr. Francis R. Lawther, Wilmington, N. C.
Dr. Wm. Penn Frazier, Duke Hospital, Durham, N. C.
Dr. Samuel Lee Albright, Belmont, N. C.
Dr. Lewis M. McKee, Durham, N. C.
Dr. Malcolm Greer Stutz, Southern Pines, N. C.
Dr. Thomas Tuweatt Jones, Cooperstown, N. J.
Dr. Frank C. Johnson, Col., Raleigh, N. C.
Dr. Joseph Paul Kelly, Asheville, N. C.

Dr. Fred Grant Pegg, Guilford, N. C.
Dr. David E. Plummer, Denton, N. C.
Dr. Albert Lanham Allen, Goldsboro, N. C.
Dr. Harvey Allen Eldridge, Dunn, N. C., R. 2.
Dr. Martin Edgar Ward, Jr., Watts Hospital, Durham, N. C.
Dr. Martha M. Wood, (F) Marion, N. C.
Dr. G. C. Southard, Stokesdale, N. C.
Dr. James A. Whitaker, Zebulon, N. C.
Dr. James M. Alexander, Charlotte, N. C.
Dr. Jefferson Davis, Waxhaw, N. C.
Dr. William Turner Ray, Wake Forest, N. C.
Dr. Milton Albert Honigman, Baltimore, Md.
Dr. Wm. Frederick Barefott, Hallsboro, N. C.
Dr. Dermot Lohr, Lexington, N. C.
Dr. Harold W. Glasscock, Jr., Raleigh, N. C.
Dr. James A. Brown, Cleveland, N. C.
Dr. Thomas J. Taylor, Enfield, N. C.
Dr. Sterling A. Barrett, Fayetteville, N. C.
Dr. William C. Perry, Louisburg, N. C.
Dr. Carroll C. Willis, Morehead City, N. C.
Dr. C. J. Albright, Fayetteville, N. C.
Dr. John T. Saunders, Flat Iron Bldg., Winston-Salem, N. C.
Dr. Roger D. Baker, Duke Hospital, Durham, N. C.
Dr. Grover D. Rackley, Magnolia, N. C.
Dr. Benj. I. Seigel, Baltimore, Md.

DOCTORS LICENSED DECEMBER 3RD., 1934

Dr. Charles D. Lucas, Charlotte, N. C.
Dr. John Wm. Griffis, Nat. Bridge Station, Va.
Dr. William B. Meares, Jr., Linwood, N. C.
Dr. Glenn B. Judd, Varina, N. C.
Dr. Richard B. Raney, Duke Hospital, Durham, N. C.
Dr. James Colgate Dudd, Memphis, Tenn.
Dr. Badie T. Clark, Rocky Mount, N. C.
Dr. James E. Dehil, Raleigh, N. C.
Dr. Robert J. Walker, Jr., Tarboro, N. C.
Dr. Adrian Moore Sample, Hamptonville, N. C.
Dr. Isadore H. Agos, Miami, Fla.
Dr. Warren E. Miller, Atlanta, Ga.
Dr. George D. Stiles, Jr., Washington, N. C.
Dr. Walter G. Miles, Greensboro, N. C.
Dr. D. C. Corriher, (deceased) Washington, D. C., Naval Hospital.
Dr. George Harrison Evans, Col., Greensboro, N. C.
Dr. Frank Church O'Neil, Henderson, N. C.
Dr. Roy S. Wynn, Col., Goldsboro, N. C.
Dr. Roy Chas. Hairson, Col., Asheville, N. C.
Dr. John B. McLaughlin, Col., Charlotte, N. C.
Dr. Franklin S. Wearn, Charlotte, N. C.
Dr. Edward Stewart Organ, Duke Hospital, Durham, N. C.
Dr. Eleanor Davenport, (F) Kinston, N. C.
Dr. James H. Worley, Asheville, N. C.
Dr. George B. Frey, Biscoe, N. C.
Dr. Richard Joseph Brown, New York City.
Dr. George Frederick Salle, Vanceboro, N. C.
Dr. Ira E. Harris, Gibson, N. C.
Dr. William Eugene Keiters, Kinston, N. C.

. . . It was suggested by Dr. S. R. Taylor, Greensboro, that an organization of presidents and secretaries of county societies be formed. This was referred to the incoming President, Dr. Paul H. Ringer. President installed the new officers (see 2nd session House of Delegates) and presented Dr. Paul H. Ringer, Asheville, the President for the ensuing year, with the gavel. President Ringer assumed the chair and made a few remarks appropriate to the occasion, and called on President-elect Dr. C. F. Strosnider, who pledged continuing loyalty and devotion to our Society and proffered his services for the year in any way that he could be helpful.

. . . No further business appearing, the 82nd Annual Meeting of the Medical Society of the State of North Carolina adjourned sine die.

CONJOINT SESSION

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

AND THE

NORTH CAROLINA STATE BOARD OF HEALTH

WEDNESDAY, MAY 8, 1935, 12 M.

The Conjoint Session convened at 12:00 M., in the Ball Room of the Carolina Hotel, Pinehurst, N. C., Dr. S. D. Craig, President of the State Board of Health, presiding.

Dr. C. C. Applewhite, Surgeon, U. S. Public Health Service, who was requested to appear before the Conjoint Session as guest speaker, was presented by President Craig, after which he read the following paper entitled "The Rural Health Movement."

Dr. Hubert B. Haywood read a memorial to Dr. James M. Parrott, followed by a memorial from Dr. G. M. Cooper, Dr. John H. Hamilton and Dr. Calr V. Reynolds.

President Craig then called upon Dr. Carl V. Reynolds, Secretary and State Health Officer, for his annual report to the Conjoint Session.

CHAIRMAN CRAIG: There being no further business before the meeting, the Conjoint Session was adjourned.

THE RURAL HEALTH MOVEMENT

By C. C. APPLEWHITE, M.D., Surgeon
U. S. Public Health Service

Achievements in the field of Public Health can be regarded as one of the most striking accomplishments of modern civilization. The measures provided for the improvement of the general public health have been remarkably successful and have produced phenomenal results in disease prevention and health promotion. The development of public health organization in this country has taken place largely within the past fifty years. About the middle of the past century the urgent need for instituting some measures for the protection of human life from the ravages of disease had become apparent to many of the leaders and organization-machinery designed for this purpose was slowly being formulated. Lack of definite scientific knowledge of the etiologic factors involved and consequently of the preventive measures necessary was an impediment to real progress. The epochal discovery by Pasteur of the role played by bacteria in disease

causation and the many scientific discoveries which followed rapidly in the wake of his work supplied the essential knowledge upon which a constructive public health program could be fabricated.

Quite logically attention was given first to the thickly populated sections where such preventive measures were most urgently needed. City health departments for the protection of the citizens residing therein sprang up in rapid succession. Likewise the various states established health departments. Many of these departments too often followed in the wake of some terrible epidemic. At the beginning of the 20th century all of the states and cities of any consequence had health departments of a kind. Many of them were grossly inadequate for the public health needs, yet they served as nuclei for future development. Prior to 1900 the chief activities of these departments had to do with the control of epidemics and general sanitation. The sanitation program consisted mainly of the purification of public water supplies and the installation of sanitary sewers. It is an interesting sidelight to note that the construction of sewers was primarily for convenience and not for real public health reasons—an idea too frequently encountered to this day.

At this time little or no thought was given to the problem of protecting the health of those residing in the vast rural areas. In fact it was not regarded as a problem of any moment. The rural areas contiguous to these large cities probably profited to some extent by the work done therein. In the South the chief activities of the health departments of the states and large cities were designed primarily against yellow fever. As late as 1905 the State Board of Health of one southern state spent $40,000 for the control of this disease. It is interesting to note that a large percentage of this sum was paid for the employment of guards who enforced "shot-gun" quarantine procedures. In 1908 the annual expenditure of another southern state board of health was less than $10.000. With this meagre appropriation no worth while public health program could be expected. These figures are given to illustrate the status of public health in the south, less than a quarter of a century ago. Today the rural health work of the southern states is the pride of this country and an object of serious study by many countries of the world. What then has caused this transformation?

Progressive public health administrators had noted that following the creation and improvement of city health departments there had been an appreciable reduction in the morbidity and mortality rates in the areas thus affected and that the rates in the rural areas, which were considered more favored by nature had not declined correspondingly. This observation was rather startling to a few and particularly to one, Surgeon L. L. Lumsden, who early manifested a desire to determine the factors involved in holding these rates at a level higher than could be expected if the then known principles of sanitary science were applied. As a result of his vision and recommendations, the U. S. Public Health Service made sanitary

surveys during the years 1914-17, inclusive, of 17 counties in the United States to ascertain the essential data on the health of the people of the rural areas. In 1910-14 the Rockefeller Sanitary Commission engaged in a southwide campaign for the eradication of hookworm disease. This campaign reached practically every county in the South. These two programs constituted a gigantic public health educational campaign. The seeds of a real constructive public health program were sown by these pioneers. Some of these seeds fell on stony ground, but many fell upon fertile soil and sprang up and brought forth fruit, now being utilized by the modern public health workers.

The campaign against hookworm disease and the sanitary surveys accomplished two significant results: first, the general public was given definite public health information and second, and what is more important, quite a large number of public health workers received valuable public health training and experience. During both of these campaigns special stress was placed upon the importance of properly disposing of human excreta. During these years of pioneering those actively engaged in the work were often the recipients of jibes and pests from the public, as a result of their enthusiastic advocacy of the importance of properly constructed sanitary privies upon the general public health. Notwithstanding these rebuffs, the enthusiasm of these workers was unabated for they were convinced that the cause they advocated was basically sound and theirs was a life-saving mission. It can be truly stated that the sanitary privy is the bedrock upon which the modern rural health movement was built. It is, therefore, very important that the modern public health worker be aware of this fact and fan the flame started by these pioneers to the end that their early hopes and aspirations may be ultimately realized, viz: that at every home in the land, human excreta shall be disposed of in such a manner as not to jeopardize the health and well-being of any one. Too frequently the modern health worker becomes so engrossed in the niceties of public health that the importance of excreta disposal is either forgotten or wilfully overlooked in the execution of the general health program. There are several factors which occasion the development of this attitude. In the first place the well-trained health worker is not afforded an opportunity to display his ultra-scientific training in a prosaic privy building campaign, since the procedures involved therein are based largely upon common sense and decency. Quite naturally he concludes that such common place activities should not engage the serious attention of one with his intellectual attainments. The program is, however, exceedingly difficult and hence entails an enormous amount of tact, ingenuity and honest toil. It is therefore much easier to shun these difficulties than it is to embrace them. This factor influences some. Fortunately for the cause, the rank and file of successful health workers have caught the vision and are "holding high the torch" handed them by the pioneers and real constructive progress is being made.

Environmental sanitation was given a terrific impetus by the entrance of the United States into the World War. An opportunity was afforded sanitarians to demonstrate on an immense scale the principles of sanitary science. The results accomplished were significantly triumphant. A large percentage of the population had an opportunity to observe first hand and become thoroughly familiar with the benefits which follow in the wake of correct sanitary procedures, which were practiced in the numerous army camps. In addition, the Public Health Service was called upon to properly sanitate the areas around all of the cantonements. In this program large numbers of the civil population were taught the principles of sanitation and observed a first-hand practical demonstration of the application of these principles and the benefits resulting therefrom. Since these camps were located in all sections of the United States, the educational effect of this extracantonement sanitation was rather far-reaching. At the termination of the war, most of those who had been in camp returned to their respective homes, and as a rule were anxious to see the principles learned during the war applied to the civil population. The public health administrators very promptly and properly took advantage of the results of this gigantic public health educational campaign and directed the movement into constructive channels. Soon after the close of the war there was intense activity in the field of rural health service. The one important lesson learned both by the Public Health Service and the Rockefeller Commission in the early campaigns was that in order to accomplish real worth-while results in the control of any of the communicable diseases, it is essential to have some local full-time agency upon which to rely. Both of these organizations working in separate fields demonstrated that the county health department manned by full-time well-trained personnel was the agency of choice for accomplishing this result.

The first reasonably adequate permanent full-time county health department designed to protect the health of a distinctly rural population had been established in 1911 in Yakima County, Washington. This department has continued to function in a satisfactory manner to this date. From this meagre beginning this phase of the work has grown slowly but gradually until at present the people of more than 500 counties are enjoying the privileges and advantages of full-time local health service. Notwithstanding these accomplishments modern public health workers should realize that vast areas still exist where the people do not enjoy this service. The surface has only been scratched and the need at this time is for men with the spirit of pioneers and who are willing to sacrifice and work enthusiastically for the consummation of the ideal cherished by those early workers.

During the early stages of rural health work environmental sanitation was vigorously stressed. Little attention was given to the factors involved in the so-called "health promotion" activities, such as maternal, infant, pre-school and school hygiene. Such activities as the improvement of the public and private water and milk supplies, making safe the methods of

excreta disposal, screening of homes, safeguarding public food supplies, and eradicating mosquito and fly breeding places were considered necessary for the preservation of health of all the people of a community thus affected, including mothers and infants. However, there are factors which have a special bearing upon the health and welfare of mothers and infants, which should merit and secure particular attention of public health administrators. The value of efficient pre-natal service in saving the lives of mothers and infants has been thoroughly established in many places in this country. It is applicable to rural as well as municipal areas. The abnormally high infant and maternal death rates, especially in the southern states, cries aloud for this type of service. So effective has this measure been in those places where it has been tried, that it is now regarded the duty of any first-class health department to see to it that all expectant mothers in the area served thereby are adequately supplied with this type of service. Even in maternal and infant welfare work, however, environmental sanitation should always hold first rank. To do otherwise, especially in the southern states, is to court disappointment.

The attention of rural health administrators was very forcibly directed to the necessity of doing special child welfare work by the revelations of the selective draft act. Practically one-third of the draftees between the ages of 21-31 were found to be unfit for military service at a time when the country needed them. A study of the causes of these disabilities revealed the fact that most of them could have been prevented had attention been given them in childhood. These findings quite naturally focused the eyes of the whole nation upon the necessity of safeguarding the child-life of the country. Hygiene of the school child first was given attention, then maternal and infant hygiene was stressed. Finally particular attention was given to the so-called neglected group, the pre-school child. So effective have been the results of these campaigns that at present any well organized local health department would be considered incomplete unless maternal and child welfare work is a definite part of the general health program.

The growth of the rural health work has been quite logical and natural, having been stimulated at different stages by various factors. With an improvement in the general technique of communicable disease control these activities were quite logically added to the rural health program. As a result of these natural accretions, the whole program of rural sanitation has been broadened to a considerable extent and at present embraces practically all of those activities which have an appreciable effect on the health and well-being of the human race. The old rural sanitation movement has evolved into the present rural health movement. During the past decade there is one communicable disease which has been more or less neglected by public health administrators. In fact public health administrators have been, in a way, playing the part of an ostrich with respect to control measures relative to syphilis. The immensity of the problem involved apparently has stunned them. However, on account of the serious-

ness of the problem, it is felt that the time is ripe for public health administrators to face it squarely and make some effort towards the control of this disease. In a recent statement issued by the State Board of Health, it was estimated that North Carolina was expending about $75,000 per annum for food supplies for the syphilitics in State institutions. How much is the State spending to prevent the spread of this malady? It is certain that this financial load now being borne by the State will not become lighter unless an honest and conscientious effort is put forth to stay the spread of this disease.

The success or failure of the whole rural health movement will depend largely upon the character and extent of the public health educational program. The education of the masses in any subject is a slow and tedious process. Yet the marked advancement in recent years in education in other lines furnishes good evidence that reasonable progress can be expected in this vitally important field. How best to wage this educational campaign has claimed the attention of eminent public health administrators. There are those who firmly maintain that little thought should be given to educational efforts in behalf of the adult population but special emphasis should be directed toward the education of the children. Teaching theoretical sanitation in a rural school where many of the fundamental principles of sanitary sciences are daily violated in the form of contaminated water supply and the crudest and most insanitary method of excreta disposal is a grand farce. To make the necessary sanitary corrections at the school premises, money is required. To obtain money for this purpose the adults must be induced to provide it. Hence it is impossible to neglect this group if success is to be expected. Most of the farmers during the past few years have been taught newer methods of farming, stock-raising and horticulture and it is not unreasonable to believe that they can be taught something about the scientific care of their most important crop—a crop of healthy children. The mere fact that the people of the South have supplied materials for the construction of enormous numbers of privies within the past year is fairly conclusive evidence that the adult population can be taught the principles of sanitation. No doubt most of the failures in the past can be attributed more to faulty education methods used than to the inability of the farmers to be taught.

The whole educational program must be practical and based upon common sense. Spectacular methods as a routine procedure should be studiously avoided. If used they should be used very judiciously. All educational material should be clothed in language that is readily understandable and the facts should be so simply stated that they can be easily assimilated by the average individual. The main purpose of the educational campaign should be to acquaint the rural residents with those facts and principles of sanitary science which the sanitarians have had in their possession for the past quarter of a century in such a manner that they will make practical application of them. How to achieve this has been the

object of much experimentation and investigation during recent years by the U. S. Public Health Service, the Rockefeller Foundation and Boards of Health of many states. It is interesting to note that all of these agencies have definitely concluded, after years of trial and experimentation, that the public health of a distinctly rural population can be more adequately and economically conserved through the agency of an efficient county health department manned by well-trained full-time personnel than through any other method. Since the educational process must of necessity be prolonged it is necessary that the program be placed upon a permanent basis and that it be pushed vigorously and persistently. It has been found that more lasting worth-while results can be obtained in any field of public health endeavor, such as environmental sanitation, child hygiene, or communicable disease control, by establishing a permanent local health department for a generalized rather than a highly specialized program. A well executed basic public health program is the most potent agency for teaching the people the principles of sanitary science. In this way they are taught by precept and example. An efficient health department in one area is a powerful stimulus to the citizens of the contiguous areas. They have the opportunity to observe the benefits which their neighbors are enjoying from this service and such observations stimulate them to take constructive action. In a way the psychology of the present rural health program resolves itself into the procedure of making it stylish for people to apply routinely in a practical common sense manner the accepted rules of public health and sanitary science.

Prospects for improvement in the rural health program were never brighter than they are today. The success of future development of this program depends largely upon present-day workers. Every public health worker here has a wonderful opportunity and also a fearful responsibility. Every one has definite duties to perform and if not performed properly the whole public health program is correspondingly retarded. Therefore, it is hoped that every public health worker will realize his or her responsibility fully, and will perform the duties assigned to them diligently, fully imbued with the knowledge that honest public health effort will achieve worth-while results and is never futile.

From this resume it can readily be seen that rural sanitation has gradually and quite logically grown into a generalized rural health movement. It is the well planned routine program executed from week to week and from year to year and not sporadic, highly specialized demonstrations, which must be relied upon to produce effective and lasting results. It is felt that in the future the efficiency of any state health department will be judged not by the size and activities of the central organization, but by the percentage of the population adequately served by full-time local health departments through which the measures essential for the protection of the public health may be applied in a logical sequence and in proper relation one to the other.

Memorial to Dr. Parrott

"Whereas, Almighty God, in His infinite wisdom has seen fit to remove from our midst our wise and beloved leader, Dr. James M. Parrott,

"Be It Resolved, that we, the State Board of Health of North Carolina, spread upon our minutes this token of respect and expression of sorrow.

"Our sense of loss is a deep and lasting one. Our sincere and heartfelt sympathy goes to the loved ones whom he has left behind. Public health work in our State has sustained a severe blow in the death of this able executive and efficient State Health Officer. His career as an eminent physician honored the profession which he adorned. In his leadership he strove for the glory of the cause and not the individual. His clarity of thinking, his grasp of situations, his honesty of purpose, his sense of justice, his firmness of character and his love of all people are cherished memories to all of us who had the privilege to work and to be associated with him. Although he had, with a physician's insight, the full knowledge that he had an incurable disease which would suddenly take him from those he loved should he not cease his arduous labors, he continued to wage an unrelenting and successful warfare against the regimented hordes of the battalions of disabling disease and death in the State to which he had dedicated his life. Poets and historians, throughout the ages of man, have memorialized heroes of this type. His earthly life is ended, but his contributions to the well-being of humanity live behind him, and his memory will ever live fresh in the hearts and minds of his associates and the citizens of his State. It is indeed sweet and honorable to lay your life down for your country.

Signed

HUBERT B. HAYWOOD, *Chairman,*
S. DOUGLAS CRAIG,
G. G. DIXON,
Committee from the State Board of Health."

November 12, 1934, Raleigh, N. C.

JAMES MARION PARROTT, M.D., STATE HEALTH OFFICER OF NORTH CAROLINA

By GEO. M. COOPER

One year ago I stood in this hall and at his personal request presented the Annual Report of Dr. Parrott. It was a long report, but he had dictated it himself. I realized that it was a sort of biography. A farewell message covering 40 years in the profession which he loved, as well as his stewardship as State Health Officer. It was written in the cold light of review from a sick bed, with the perspective of history. I felt then as he did that it was to be his last report, so for me it was a solemn occasion.

Today I simply rise to pay tribute to his memory. He was a great physician, a great executive, a great health officer, a great statesman, but he was much more. He was a sympathetic friend and fellow worker who was always ready to shoulder his full part in any enterprise. He always insisted on taking full responsibility for things which he could have easily passed off on others. In short he was a man four square to every wind. His clean life, his courage and his honesty won the love and admiration of his fellow workers.

He assumed his duties as State Health Officer when the morale of the organization was at the lowest point in its history. With characteristic patience, energy and good humor he set to work to build up a new outfit. I think he succeeded in establishing a highly efficient department which reflects his own high and honorable conception of public service.

Sometime ago I had occasion to write to Senator J. W. Bailey and with my letter I sent a copy of the Health Bulletin for December as it contained some figures I wanted him to see. On the front cover was a photograph of Dr. Parrott. I am taking the liberty of quoting a paragraph from Senator Bailey's reply. Not only because he says so well what we know to be true; but because his statement is a political document of great historical importance. I want it in the permanent records of this organization as a source of information and pride for future generations of physicians. Senator Bailey said:

"I am glad to have the copy of the Bulletin with the picture of my friend, Dr. Parrott. Much has been said about him, but all has not been said that ought to be said. When I was running for Governor, I had it in mind that in event of a vacancy, I would appoint him Senator. His honesty of heart and mind, his patriotic spirit, his great capacity for service equipped him in my judgment for any position. He would have made a noble Governor. He would have made a great Senator."

DR. JAMES M. PARROTT

A Memorial by JOHN H. HAMILTON

On entering the field of public health work, Dr. James M. Parrott brought with him the attainments which only a life of studious, intelligent, and courageous endeavor could procure. His scholastic education permitted him to confer on terms of equality with students of mythology, of literature, of religion, and of science. His wide experience as a practitioner of medicine had given him sympathetic understanding. His long service in the councils of our profession had proved him to be a medical statesman. His keen interest in public affairs had provided him with a wide acquaintance throughout the State. His success as a farmer of first magnitude gave him an intimate understanding of the agricultural problems and the vocabulary of the big business man. As a student and critic of administrative procedures, he had for many years scrutinized our public health program.

With all these and many more qualifications housed in a body worn frail by combat, but with undaunted courage and clearness of vision, he assumed charge of our ship when it was already being tossed upon the stormy sea of financial reverses. With reorganization problems to worry him and constantly diminishing funds to harass him, he dressed his craft to ride out the storm. Like a crafty skipper, he would throw overboard first those top-heavy encumbrances; later, those valuable, but unnecessary, commodities, but never those things essential to life or to the safety of his vessel. In many respects he more nearly resembled a general leading an army outnumbered and in retreat. Although losing many battles, he saw to it that he did not lose a campaign. He commanded the respect of the old campaigner as well as that of the newly recruited private in the rear ranks. He would counsel frankly with many, but made his own decisions. That he brought the ship in sight of a calm harbor, that he won the campaign so full of defeats, is apparent today. He gave the last full measure of devotion to accomplish this objective. Just as victory was in sight, the slender thread of life was broken. If he had made no contribution save to define clearly the boundaries of the field of public health and mark the delineation of preventive and curative medicine, there would be ample justification for the honor in which we hold him.

The feeling of the staff of the State Board of Health was expressed in part as follows: "All who knew Dr. Parrott admired him. Those of us who knew him best had a deep and abiding affection for him. His fairness, his keenness of intellect, his courage, were qualities which were greatly appreciated. The cause of public health had a most able advocate in Dr. Parrott. We of the staff, as well as thousands of citizens in the State and in the nation, feel that we have lost our dearest friend."

The torch carried by Thomas Fanning Wood and Richard H. Lewis through the dark days of pioneering, was brought through a stormy night to the dawn of a new day by James M. Parrott.

ANNUAL REPORT NORTH CAROLINA STATE BOARD OF HEALTH

TO

CONJOINT SESSION OF THE STATE BOARD OF HEALTH AND THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

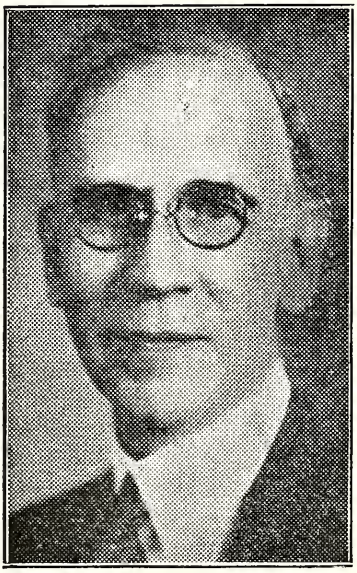
By Carl V. Reynolds, M.D.,
Secretary and State Health Officer

May 8, 1935

The members of the North Carolina State Board of Health are outstanding men in their various professions, men of character, determination, with a continuity of purpose and a keen sense of their obligation to society.

Such a Board felt secure when James M. Parrott was its standard-bearer and it was a sad event when God, in His infinite wisdom, removed him. His death was an incalculable loss to the Board. Jim was a man of rare executive ability, strong personality, keen observation, a forceful speaker, and to know him was to admire him. But to those who knew him best, their greatest loss was that of a friend whose memory will linger on, and on, and on.

When I stood before this body May 2, 1934, little did I dream that I would be here today as your State Health Officer. At this moment, I see reflected in your memory, the past masters of public health activities in this State, Doctors Wood, Lewis, Rankin, Laughinghouse and Parrott. This vision prompts you to ask,—what manner of man is he that can cope with such peers? I, too, wonder, and have undertaken to follow them with due humility, but with hope and a determined purpose, to carry on the work of these inspired leaders.



CARL V. REYNOLDS, M.D.
State Health Officer and Secretary of the State Board of Health, Raleigh, N. C.

Why is this thing we call Public Health? And, why its existence? If a child, the creature of God and made in His image, is worth while—then public health is worth while. If a child is worth while—then the basic standard for equal opportunity in life is worth while. A heritage that will assure him of a sound mind in a sound body is worth while. Assuming

such a beginning, it is our social obligation to preserve and protect that sound mind and sound body with activities that will prevent disease and lead to the preservation of his health that he may compete for his place in the world.

That thing we call nature has strict, rigid and unrelenting laws and man, an unhindered free-agent, shall abide by her laws or suffer in consequence by this exacting disciplinarian. This relentless law might be all-sufficient if the sins of the fathers were not visited upon the third and fourth generation. So it behooves us to protect the ignorant, the innocent, and law-abiding against the indifferent, careless or lawless offenders. We have groped through superstition, fear, ignorance and prejudice until our accomplishments are beginning to be appreciated by the laity, and the governmental agencies are beginning to realize that health is purchasable and that to purchase it is of inestimable economic value.

Let's bring together the diverse methods and practices of thought and action in the medical profession today and through a coöperative spirit and action I can visualize as an outgrowth a recognition and an evaluation of services that will be accredited by all governmental agencies and looked upon with favor, and appreciated by the citizenry. Coöperatively—rather than individually—can we gain this wholesome accomplishment.

There is a distinct line of demarcation between public health activities and corrective, curative and surgical activities. Both should be, and are essential to the health, happiness, prosperity and material well-being of our fellow-man. These agents are inter-dependent and the success of either is dependent upon the coöperation of the other. "United we stand—divided we fall."

NEW PROBLEMS

There has been an active working, unified spirit this year between the U. S. Public Health Service, the Rockefeller Foundation, the State Health Department, county and city health units, and the members of the medical profession, to improve health conditions and eradicate disease. While this is highly gratifying and the coordinated work has stimulated us to believe that we are fast gaining control of smallpox, typhoid fever, diphtheria, whooping cough, measles, scarlet fever, undulant fever, hookworm, etc., I am reminded of the inroads of new problems. I desire to make this observation and to warn you of the increasing menace that appears to be confronting us. I have only to remind you of the recent outbreak of epidemic encephalitis in St. Louis in 1933 and its increasing appearance in many other states; amoebic dysentery in Chicago; the many cases of poliomyelitis in Los Angeles this year, so that you may keep it constantly in mind remembering the while that vigilance will be required by all to retard their spread until a preventive is found.

Another observation, if you please, is this, we have now 42 full-time county health units in the State but the lack of such health units in the

remaining counties is a serious handicap to public health progress and through this unprotected area is our greatest avenue for the spread of epidemic diseases.

Government and State aid should do more for the financially weaker counties until they are able to finance themselves. There should be no county lines in public health protection.

PERSONNEL

I desire to make this observation again to you notwithstanding that a letter was written to every county medical society in the State—there is going to be an ever-increasing demand from the ranks of the medical profession, for doctors that are trained in health work, doctors with a public health degree. This is made necessary in order that county officials may avail themselves of supplementary funds from the State and the U. S. Public Health Service. It will do another thing as well, it will stabilize the health officers' tenure of office, and most important it will minimize political interference with health activities, the latter having been our greatest handicap to progress and the greatest discouragement to the physician who is contemplating public health work.

LEGISLATION

I think it is appropriate for me to remind you of this important fact, there were forty-two bills introduced in the House and Senate affecting health this term of the Legislature, some of vital importance to public health and others of vital importance to the medical profession. In the political arena one thing was keenly observed, namely, if any bill was introduced that affected any group other than the medical group, there appeared lobbyists and interested men and women from everywhere, it seemed to me, to defend the bill or oppose its passage. If it were of interest to the chiropractor, they were there in numbers; if it were pertaining to osteopathy, they were there with interested laity and paid attorneys; if it affected Christian Scientists, they were there in full strength, and believe me when I say they had the ear and the defense of the House or Senate. The medical defenders were conspicuous by their absence.

The Legislative Committee, headed by Dr. Ben J. Lawrence, did a heroic piece of work and this body owes him and his associates a debt of everlasting gratitude. Do I hear you say, "Why all this?" "It is not pertinent or germane,—thou foolish one." If organized medicine and public health activities is to be controlled by medical men, we will have to become politically-minded and increase our representatives in the House and Senate with our strongest men in order that we may debate questions vital to us on the floor. As it is we suffer humiliation with the implied and often expressed assertion that there is a sinister motive and a selfish purpose behind our bills offered—with defeat for our reward. We have a chance to correct this misguided train of thought as no other profession has if we

would only seize it. It is our individual responsibility and collective obligation to medical security, that we coördinate our forces and fight to retain and make secure the heritage that our predecessors so bountifully, unselfishly and sacrificially bestowed upon us. The spirit in which we do things is the reward we get in return. Making good our chance is the opportunity to succeed. Intelligence—coupled with work—means political success,—this, to my mind, is logical.

We must counsel with each other calmly, quietly, singly and collectively, and I am persuaded to believe that we will recognize that there are changes going on, and will continue to go on, that are disturbing to us and will effect, if allowed to continue, the splendid relationship now existing between the physician and his patient. The basic platform upon which our profession will stand or fall is that sacred bond of professional friendship and confidence that exists between the patient and his physician which comes from his right and privilege to select the physician of his choice.

We must not fall heir to compulsory insurance which leads to the panel practice of foreign lands that has proven such a colossal failure, bringing grief to the patient and physician and blocking the advancement of medical, surgical and public health progress.

We must protect our social structure against such economical fallacies and that protection can only come within our own ranks and not by misguided legislation by well-meaning philanthropists, or scheming corporations.

DEPARTMENTS

The work of all departments of the institution functioned very satisfactorily throughout the year. The general personnel, though over-worked, were interested, enthusiastic workers, not clock workers. Departmental heads have shown a splendid coöperative spirit and a keen interest in all phases of the work and a determination to work with an ethical relationship with the county health officers and through the medical profession, and I take this public opportunity to thank the members of the Board of Health and the division heads for their intelligent advice, support and devotion to duty.

DIVISION OF PREVENTIVE MEDICINE

You can't imagine the scope and magnitude of the duties of those directing the destiny of the Health Department during a session of the Legislature when so much is involved, such as bills introduced that may aid, cripple, or destroy the structure so carefully prepared and maintained by the concerted action of the medical profession. It takes all the ingenuity and business aptitude to retain or secure adequate appropriation so essential and so vital to its existence. Times such as these are hectic.

It is in a sense of great security to know that in Dr. G. M. Cooper, Assistant State Health Officer and Director of the Division of Preventive

Medicine, that we have a man of rare ability, keen in observation, and a veteran in health activities who can steer us away from the breakers and keep us upon the calmer seas.

Maternal Death Rate. The maternal and infant death rate in North Carolina is a challenge alike to the medical profession and the State Board of Health.

The maternal death rate in the United States is 6.2 per 1,000 live births, and the maternal death rate in North Carolina is 7.1.

It is hoped that those doing obstetrics will establish a means of contacting each expectant mother and see that she has individual or group instruction on prenatal care.

There were 547 maternal deaths in North Carolina in 1934. In the preceding year, 1933, there were 534 maternal deaths.

It is too early yet to obtain comparisons from other states for last year, but in 1933 there were only about seven other states which had a higher maternal death rate than North Carolina.

Infant Death Rate. The infant death rate in the United States is 58.2 per 1,000 live births and the infant death rate in North Carolina is 66.0.

In 1934 there occurred 6,072 infants deaths under one year of age. (These are provisional reports. There will be some additions when the final reports are tabulated.)

These figures compare with 4,974 in 1933, or to make it plainer the rate for 1934 was 76.5 per 1,000 live births and for 1933, 66.0 per 1,000 live births.

Again, it is too early to compare our standing with other states for 1934, but for 1933, in which we had, as just stated, a great deal better record, only twelve states and the District of Columbia reported a higher infant death rate than North Carolina.

With one or two exceptions, the figures in all of them were just a point or two higher than our State.

The figures mean that for the year in which we made the best showing we have ever made, thirty-five states of the American Union made a better showing than we did.

It is a disgraceful and damaging situation.

It is hurting the State in a great many respects.

In our opinion, this situation cannot be ameliorated very much until we provide competent prenatal, obstetrical and post-partum care for the mother, and infant care, nursing and medical care for the new-born baby, especially during the first year of life.

Your State Board of Health officials are contemplating sending FREE of charge to each child born, an engraved birth certificate for framing.

Eighty thousand (80,000) of these certificates sent out each year will be a constant reminder that the new baby should have his or her first reward hanging on the wall of fame.

This, we believe, will give us a more complete birth registration and most important, it will enable us, through contact, to secure better nursing care, infant feeding, and early immunization.

Bulletin. The Board of Health has for fifty years issued a monthly health bulletin. At present this bulletin goes to thirty-six thousand names. Sometime ago, not being able to accommodate the increasing number of requests, the mailing list was revised by cutting off about three thousand names. We are anxious for any one who wants this bulletin to get it, and especially for any one who has been receiving it, whose name in this way has been removed, to let us know so that it may be reinstated.

Although handicapped for lack of printing funds, the bulletin has been kept up to a fair standard, as compared with other publications of like nature throughout the country. As an indication of the feeling a large number of people have for the Health Bulletin, we take the liberty of quoting the following paragraph from a letter to the State Board of Health, received just a few days ago. The letter was written by an independent and influential citizen in his section, but personally a man unknown to the editor of the Bulletin or any of the official staff.

"Of the four or five papers we get at home the best is the State Health Buelltin, which costs nothing. The circulation of this Bulletin would alone justify your department."

DIVISION LABORATORY OF HYGIENE

The work of the State Laboratory of Hygiene has grown gradually since its beginning in 1907. Within the past several months, the demands made upon the laboratory have increased markedly. This has been particularly true for serological examinations for syphilis and antirabic vaccine. Since there has been no compensating increase in the personnel of the laboratory, we have been overwhelmed. In order that our reports might be dependable, it has been necessary to curtail certain items of service that those specimens which are examined might receive proper attention.

During the past year, the laboratory has made approximately 15,000 Meinicke clarification tests to supplement the 106,000 Wasserman tests performed. In order to aid in the early diagnosis of syphilis, a specimen container for chancre serum has been developed. Our limited personnel has made it inadvisable to give widespread distribution to information concerning this procedure. However, it is now possible for any physician in the State to send a specimen of chancre serum to the laboratory for dark field examination.

It is hoped that at an early date it may be possible for the laboratory to prepare and distribute a limited amount of pertussis vaccine, prepared after the method of Sauer.

If the placental extract proves to be an effective prophylactic for measles, the laboratory will probably be able to dispense this product.

In order to encourage the development of local laboratory service that would be helpful to the cause of public health, it is hoped that the State Laboratory of Hygiene may be able to distribute certain media, stains, and antigens to such laboratories.

We will utilize every opportunity made possible by increase in personnel, improvement of equipment, or increase in available funds, to give better service to the people of North Carolina.

DIVISION OF COUNTY HEALTH WORK

Local health work is in operation in fifty counties in the State at the present time, under full-time health workers. Of this number forty-two counties have the public health program under the direction of full-time health officers; the remainder being under the direction of nurses and sanitary inspectors.

In these forty-two counties, there are thirty-eight full-time health officers. We have in operation three district health departments, two of which have three counties to the district, the other having two. It is our belief that the district plan of health service affords the only means for developing a public health program in those counties having small populations and low assessed valuations.

By grouping such counties together in two or three county units, it is possible to provide a representative, well-rounded public health program in the area.

The 1935 Legislature has realized the necessity of providing for the establishment of such units, and has ratified an Enabling Act which will permit joint coöperation of counties and the State Board of Health to establish district health departments.

The North Carolina State Board of Health has been fortunate in securing the coöperation of the United States Public Health Service, the Rockefeller Foundation, and the Tennessee Valley Authority in aiding with financial assistance making possible the establishment of a representative public health program in all of the counties and districts having a full-time health officer.

One of the major accomplishments in developing local public health service has been the establishment of a training school at the University of North Carolina, for health officers. There have been in attendance at the two sessions of the school thus far conducted, ten men, nine of whom were from North Carolina.

It has been definitely demonstrated that adequate training is necessary for public health workers, and it is hoped that in the future, we may continue training, not only health officers, but that we may plan to include special training for nurses, sanitary inspectors, and stenographers for their particular places in the public health program.

The United States Public Health Service and the Tennessee Valley Authority have realized that "Uncle Sam has a responsibility" to protect and safeguard the public health of his citizens, and we believe that the day is not far distant when all governmental units, including local units, will come to realize that public health is in fact, the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency, through organized community efforts, as contracted, and differentiated from curative medicine.

DIVISION OF SANITARY ENGINEERING AND INSPECTION

During the past year opportunities for productive public health work through the Division of Sanitary Engineering have been increased far in excess of the available men and means with which to do this work. Much of this increase in work and opportunities for productive work has resulted from the Federal activities in combating the depression.

Through Federal financing new public water systems were installed in eleven towns, five other towns are building water purification plants, seven are installing new sewer systems, and ten are installing new sewage treatment plants at a total cost of approximately $3,150,000.

Negotiations have been completed for new water systems at Fuquay Springs, Hemp, Hillsboro and Pittsboro. In addition, towns in all sections of the State having water works and sewerage systems have had them extended and improved.

While marked advance has been made in extending the sanitary facilities of running water and sewerage, much remains to be done. We still have sixteen towns of over 1,000 population without a public water supply or a sewerage facility. While there are twenty-one towns of 800 to 1,000 having water works, thirteen towns of that size do not have a public water supply, and fifty other towns of from five hundred to eight hundred population do not have such modern sanitary facilities.

Numerous schools have been provided with complete water-carried sewerage systems. More than 1,200 privies have been constructed at our public schools. This means that fully five hundred institutions of this kind have been provided with safe means of excreta disposal.

The most widely distributed of the public health benefits are the sanitary pit privies that have been constructed. During the past year there have been built by Federal labor, under direct supervision of the State Board of Health, 19,282 privies.

The construction of 19,282 privies means the providing of privies at only about 7% of our rural homes.

During the past year it has been almost impossible to make any routine water works or sewerage inspections because of lack of funds. However, the division sponsored and carried through another Water Plant Operators' School-Conference. This was held at Chapel Hill. The attendance and interest showed this feature of activity to be in real demand.

The creation of sanitary districts was completed at Knollwood, and another is in process adjacent to Lenoir.

Recognizing the health hazard involved, the Division of Sanitary Engineering has made considerable advance in swimming pool sanitation, a field hitherto untouched. Typical designs and specifications, together with recommendations for the design of swimming pools, have been developed for the use of architects and engineers. To aid in the regulation of swimming pool sanitation by local health officers, suggested rules and regulations for passage by local health boards have been devised. During the year the State Board of Health has coöperated in the design of about twenty-five swimming pools.

About a year ago the U. S. Public Health Service announced its first list of cities and towns having a rating of 90% or more on milk sanitation. On this list North Carolina appeared second, with twenty-four towns to Alabama's twenty-seven towns making places on this 90% list or honor roll. During the entire year of 1934 it was possible to find time to make municipal ratings at only seventy-four of our 104 towns now operating under the Public Health Service Milk Ordinance, by reason of the rush of other duties. These ratings, however, showed that North Carolina had advanced from second to first place, with twenty-nine towns on this "honor roll."

It will be interesting to note that North Carolina has more cities and towns now operating under the Public Health Service Milk Ordinance than any other state, except Texas.

During the past year the ERA has made it possible to accomplish much in reducing the malaria hazard in North Carolina. During the twelve months period ending March 1, 1935, malaria control activities were carried on in fifty-seven counties. An astounding amount of work was done, as is indicated by the following: 376 miles of canals and ditches were either cleaned out or excavated; 1,131 new ditches were excavated; 1,306 ponds, comprising 1,565 acres, were drained, and approximately 15,052 acres of swamp land were drained.

In addition to the above, extensive house screening campaigns have been conducted in several counties, and other types of malaria control measures have been carried out.

DIVISION OF EPIDEMIOLOGY

During the year 1934 the outstanding activities have been largely those concerned with malaria control. In the summer of last year an epidemic of rather malignant malaria occurred in Camden County, which, of course, increased the consciousness of citizens to the necessity for control measures, due to publicity given by newspapers. During the year approximately 10,000 blood smears for malaria examination were taken in eighteen counties. The percentage of positives found varied with the communities, from

approximately zero to forty-six per cent. It must be remembered that these were taken in the season when malaria was not prevalent, from December to April. Malaria control activities have been carried on in fifty-seven counties through the coöperation of the North Carolina ERA, the United States Public Health Service and this office; approximately 500 projects approved; 220 completed; 120 now under construction. Approximately one million of the State's population has been affected by this program, with 300,000 given adequate protection against malaria and pestiferous mosquitoes.

Typhoid fever was less prevalent in 1934 according to reported cases, and the recorded deaths showed the fewest individuals dying (88) from this disease since records have been kept.

The venereal diseases have not received the attention due them. Their incidence is increasing and treatment facilities are remaining at a standstill or are decreasing. Time and money must be given if their control is ever to be accomplished. The North Carolina ERA has spent $5,000 for drugs in the State for the treatment of those on relief rolls.

Case reports received in this office in 1934 amounted to 92,534. These were tabulated according to county, city, month of occurrence, age, color and sex. Measles was epidemic this year in the greater part of the State.

SELECTED DEATH RATES IN NORTH CAROLINA

1920 — 1934

——x—— Apoplexy, cancer, heart disease, nephritis and syphilis increased from 300 to 360 per 100,000 population—2150 more lives were lost in 1933, with its present rate, than if the 1920 rate had prevailed in 1933.

———— Diarrhea and enteritis (under 2 years), diphtheria, malaria, smallpox, tuberculosis and typhoid fever decreased from 210 to 102, per 100,000 population—3375 lives were saved in 1933, with the present rate, that would have been lost had the 1920 rate prevailed in 1933.

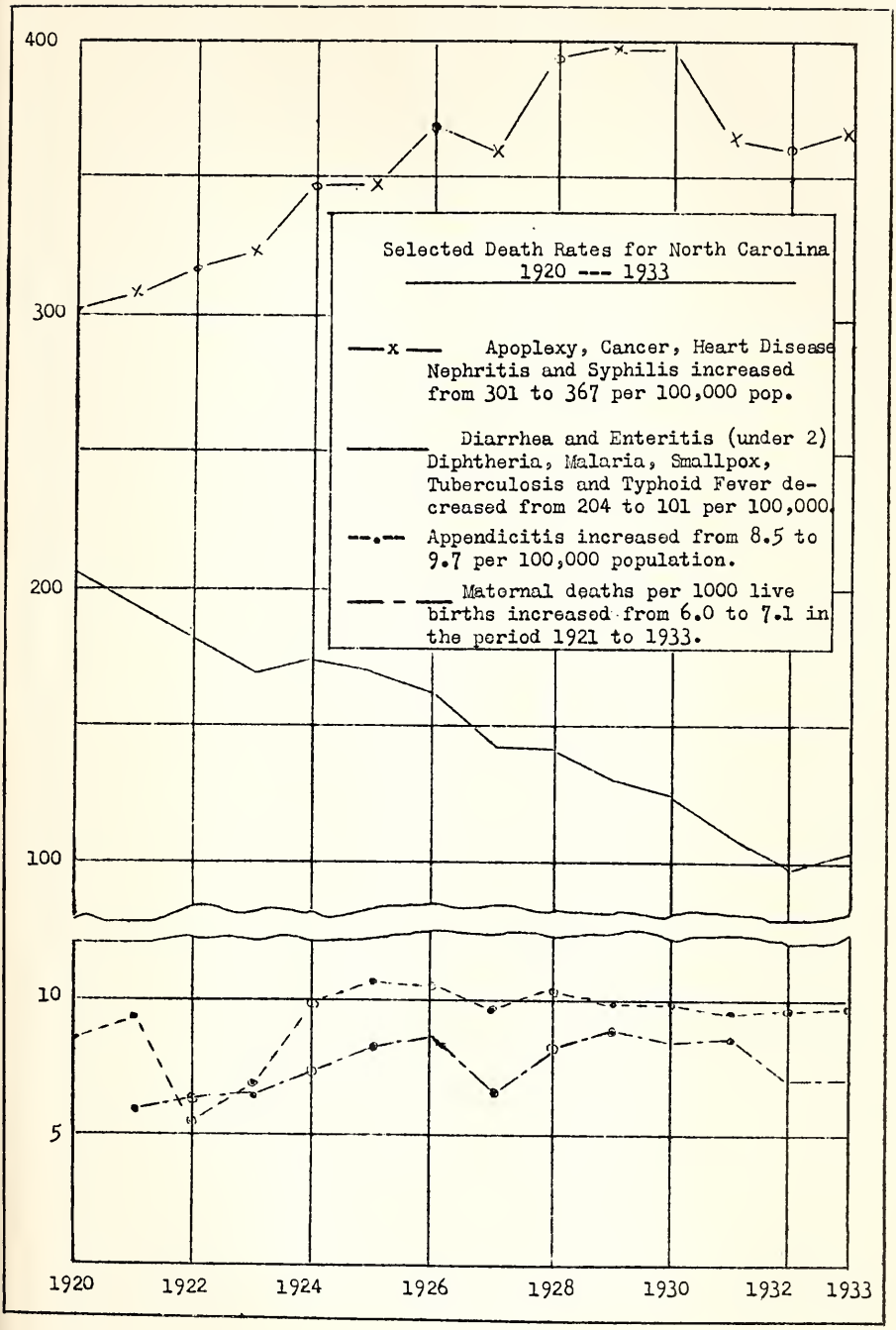
--.-- Appendicitis increased from 8 to 9.8 per 100,000 population—32 more lives were lost in 1933, with its present rate, than if the 1920 rate had prevailed in 1933.

——— - ——— Maternal deaths per 1,000 live births decreased from 6 to 5 per 1,000 live births—83 lives were saved in 1933, with its present rate, that would have been lost had the 1920 rate prevailed in 1933.

DIVISION OF ORAL HYGIENE

One of the outstanding features in our educational program was the presentation of the mouth health puppet play, "Circus or Bust," put on through the coöperation of the Good Teeth Council for Children, Inc., and the Carolina Playmakers. During the five weeks this show was on the road we played to 46,800 children.

As you know, and as we want the public to understand, we are not operating a free clinic, but are teaching mouth health in the schools. The


Selected Death Rates for North Carolina
1920 --- 1933
—x— Apoplexy, Cancer, Heart Disease Nephritis and Syphilis increased from 301 to 367 per 100,000 pop.
Diarrhea and Enteritis (under 2) Diphtheria, Malaria, Smallpox, Tuberculosis and Typhoid Fever decreased from 204 to 101 per 100,000.
Appendicitis increased from 8.5 to 9.7 per 100,000 population.
Maternal deaths per 1000 live births increased from 6.0 to 7.1 in the period 1921 to 1933.
400
300
200
100
10
5
1920
1922
1924
1926
1928
1930
1932
1933

corrections made by this department are used as visual instruction and is termed "demonstrative teaching." The corrections are confined, in so far as possible, to children whose parents are unable to have the necessary work done through the regular channels. The total number for whom corrections were made for the entire school year was a little more than one-half of the enrollment in the first grade.

The dental program as is being carried to the people of North Carolina by means of Dr. Ernest A. Branch's ingenious puppet play, "Circus or Bust," is doing more than any one thing I know to make the children, as well as the adults, become health-conscious. It would be well to imitate that "old bird" and carry, in a similar way, other branches of preventive and degenerative diseases to our citizenry.

Education through evolution is almost as slow as growth through instinct, yet demonstrative education, to my mind, is the more effective and lasting. "The way the twig is bent, the tree is inclined." Teach the youth and they will remove the kinks, fear, instinct, prejudice, ignorance, and indifference from the older members of society.

The youth of today will be our legislators of tomorrow and before tomorrow comes we should be instrumental in making them realize that health is a basic element of human development and good government which is so essential to our prosperity and happiness.

DIVISION OF VITAL STATISTICS

The Bureau of Vital Statistics is endeavoring to make our vital records of more practicable use to the public health workers, physicians and citizens of the State. The reporting of births and deaths is more nearly complete and a better quality of certificate is being secured.

To make the location of a certificate more certain and require less trouble the office procedure has been improved by instituting the practice of photostating the visible index. These photostatic copies form the permanent index. Additional copies may be made readily at future times. With the assistance of the North Carolina ERA, a five-year index, 1928-1932, has been completed for approximately two-thirds of the half-million and more names.

In January of this year a campaign for the promotion of birth registration was carried on by the State Board of Health, the U. S. Bureau of the Census, and the Emergency Relief Administration. Enough cards were placed in the post offices for one to be delivered to every family in the State. Any family in which a birth had occurred within the last year was asked to return the card with enough information concerning the birth to enable the records to be checked to determine if the birth had been recorded. Approximately 30,000 cards were returned and verified with the records in the Bureau of Vital Statistics by the clerks in the office supplied by the ERA. Nineteen field workers canvassed the State for six weeks,

visiting the local registrars, physicians, mid-wives, and undertakers in an attempt to improve the reporting of births and deaths. Some improvement has been shown and more is expected.

The Bureau of Vital Statistics received 114,000 birth and death certificates for 1934. This was approximately 9,000 more than for the previous year, and exceeded any year since 1928. There were 4,028 more births and 4,838 more deaths than during 1933, which accounted for an increase in the birth rate from twenty-three to twenty-four and in the death rate from 9.3 to 10.6 per 1,000 population. This was the highest death rate since 1930. There was an increased number of deaths from nearly all causes. Among the exceptions to this were the fewer deaths from typhoid fever and the slight improvement from tuberculosis. Typhoid fever deaths decreased from 128 in 1933 to 88 in 1934, and tuberculosis from 2,110 to 2,092.

Among the diseases contributing to the increased death rate were such conditions as diarrhea and enteritis, measles, whooping cough, pneumonia, maternal and infant deaths, syphilis and pellagra. There were 4,974 infant deaths in 1933 and 6,072 in 1934, an increase of 914. Taking into consideration the more than 4,000 additional births for 1934, the rate still showed an increase from 66.0 to 76.5 per 1,000 live births. The maternal death rate was approximately the same as for 1933.

The State Board of Health is concerned deeply in the economics of the medical profession and sincerely believes that the individual members of the profession should be aroused to the importance of an interlocking relationship which should, with your active coöperation and collective support, be made to enhance its service to humanity and become your greatest advance agent in educating the people that health is essential to well-being and that it is wise to purchase it.

As Health Officer, I will dedicate myself, my time, and whatever talent I may have, to constructive health work. I will be true to your trusteeship, I will be ethical and loyal to the medical profession, I will endeavor to render a distinct service to the people. Bear in mind, however, that the State Board of Health is a creature of your making and its activities are controlled by members of your Board who were selected, not by or through an appointive committee, but by the entire membership and by secret ballot. Its function is to carry a message of health-protection and health-preservation, not for profit but for the public's good, ever mindful of the profession, striving always to be guided by and through the State Medical Society. The State Medical Society is the medical mind and should direct medical policies and solve medical problems.

SUMMARIZING:

1. We ask your assistance in carrying out the policies in the platform for the pre-school child.

2. We desire to emphasize the importance of medical legislation representation.

3. We make a plea for more adequate maternal and pre-natal care.

4. We desire to send free of charge to every child born, a birth certificate.

5. We hope to make available an improved pertussis vaccine.

6. Serum for measles.

7. A better test for syphilis.

8. We call your attention to the rise in the maternal death rate, seventy-seven per cent of which is preventable.

9. We call attention to the mounting operative mortality from appendicitis.

10. We call your attention to the increasing death rate in the degenerative diseases.

11. We beg of you to make a general survey of the causes, and carefully study the situation for a united effort, on the part of the medical profession, to correct this condition.

12. It has been suggested that a hospital group study of all such deaths would be enlightening and much could be accomplished to improve a serious situation.

13. We desire to remind you of the establishment of a Training School at the University of North Carolina for health officers, and the contemplation of the establishment of a Training School at the University of North Carolina, including training for public health nurses, sanitarians and secretaries.

14. The 1935 Legislature gave us an Enabling Act which will permit the forming of district health departments.

SCIENTIFIC SECTIONS

OPHTHALMOLOGY AND OTOLARYNGOLOGY

MEDICINE

PUBLIC HEALTH AND EDUCATION

SURGERY

GYNECOLOGY AND OBSTETRICS

PEDIATRICS

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Dr. B. W. Fassett, *Chairman*

The Section on Ophthalmology and Otolaryngology of the Medical Society of the State of North Carolina convened at two-twenty o'clock, P. M., in the Men's Card Room, the Carolina Hotel, Pinehurst, Dr. B. W. Fassett, Durham, Chairman of the Section, presiding.

As chairman of the section of Ophthalmology and Otolaryngology, I wish to express my appreciation for the honor which you conferred upon me. It is a great pleasure to serve you to the best of my ability.

I am requested to appoint a committee of three, whose duty it is to select the best paper read before this section, including the one read before the general session, but not that of the guest speaker. The following are appointed on this committee: Dr. Vance P. Peery, Dr. H. H. Briggs, Dr. Geo. H. B. Terry.

In conformity to a recommendation of the Finance Committee there will not be a reporter for any of the sections, therefore if you wish your discussion of any paper to appear in the Transactions, it will be necessary for you to write it out and send it to the Secretary of the State Medical Society within three days after adjournment.

About two weeks ago I mailed circular letters to eighty-five of the ophthalmologists and otolaryngologists of the State, asking their impression as to the advisability of bringing up for discussion, the organization of a State Ophthalmic and Oto-Laryngologic Society which would in no way conflict with the section meetings of the State Medical Society. To those who replied, I wish to express my sincere appreciation.

Taking into consideration the opinions expressed, it would seem entirely proper and fitting that immediately after the adjournment of this section we should have a call meeting for the discussion of such an organization.

It will be necessary to make a few changes in the order in which the papers are read. Immediately after Dr. Davis reads his paper, a round table discussion will follow. This discussion will be in place of the one scheduled as number six.

The first paper to be read before this section will be "Ocular Tuberculosis," by Dr. V. M. Hicks of Raleigh.

DISCUSSIONS

At this time I am pleased to recognize Dr. H. H. Briggs, of Asheville, who will introduce our guest speaker.

Dr. Briggs introduced Dr. Wm. Thornwall Davis, Professor of Oph-

thalmology of George Washington University, Washington, D. C., as our guest speaker. His subject, "The Treatment of Squint by Orthoptic Training and Surgery," was followed by a round table discussion.

GENTLEMEN: The careful and accurate manner in which Dr. Davis handled this subject has designated him as a real teacher of men and I am sure that we all feel grateful to him for coming down here to speak to us. Dr. Davis, in behalf of the members of this section, I wish to extend to you our sincere appreciation and thanks.

. . . Other papers were read in their regular order.

Before proceeding to the election of officers I wish to recommend that the name of this section be changed from Ophthalmology and Oto-Rhinolaryngology, which seems to be unnecessarily long and almost unpronouncable, to *"Ophthalmology and Oto-Laryngology,"* which name is sufficiently clear and at the same time shortens the title.

. . . Motion was made and carried that the new name be adopted.

In behalf of this section I wish to express our thanks and appreciation to Dr. S. R. Taylor for his kindness in providing us with this program. We feel deeply grateful for his valuable services.

Is there any unfinished business or report of committees? If not, then the election of officers for the coming year is in order.

. . . D. R. Wolf, of Greensboro, was elected chairman and Dr. F. E. Motley, of Charlotte, secretary.

. . . Meeting adjourned.

After adjournment, a meeting of the eye, ear, nose and throat men of the State was called for the purpose of discussing the advisability of forming a State Ophthalmologic and Oto-Laryngologic Society that would in no way conflict with or take the place of the section meetings of the State Society.

Dr. V. M. Hicks of Raleigh was elected temporary chairman. After a short discussion, those present voted unanimously for such an organization.

Dr. B. W. Fassett of Durham was elected president; Dr. J. M. Lilly of Fayetteville, vice-president; Dr. C. W. Jennings of Greensboro, secretary.

Adjourned.

THE EVALUATION OF ORTHOPTICS IN THE TREATMENT OF SQUINT

There is one class of squints in particular in which it seems difficult to obtain improvement and so far none of these cases in our practice have been cured by orthoptic exercises alone. I refer to the purely accommodative squint. In such accommodative squint there is no deviation of the visual axes when the patient is not using his accommodation; thus, if one

measures such a case by means of the cover test with the eyes fixing on a light or a black dot or any other object that does not stimulate accommodation, there will be no squint. If however one uses test objects such as pictures, numbers or letters that attract the attention of the child and cause him to use his maximum accommodation, the full deviation becomes manifest. It is important for one to realize that the maximum stimulation of the accommodation be secured at the moment the squint is measured, either with the perimeter or with the prisms. Otherwise the true deviation angle will not be obtained. Considerable patience is necessary. The nurse stands first at 6 meters with several pictures to be used one at a time, since the child's *interest* and attention quickly flags. She talks to the child and keeps his interest at maximum pitch while the operator holds the prism over the eye. Only the squint is first measured. This is done by placing the prism over the squinting eye, then covering and uncovering the fixing eye until the movement of restitution no longer occurs in the squinting eye. If now we wish to measure the angle of the squint plus the phoria we cover first the fixing eye and then the squinting eye alternately, until all movement ceases. This gives the measurement of the squint and the phoria combined. It is now necessary to subtract the number of centrads of squint from the latter to know the number of centrads of phoria. This method has been pursued insufficiently long to enable one to determine its value.

It is essential that the test objects be small enough to cause perfectly quiet fixation with maximum accommodation to see clearly at 6 meters. In testing at 33 cm. very small but clear pictures are used. The nurse holds these over the operator's head; the child's face is held up so that the eyes are in the primary position and the same measurements are obtained as at 6 meters. This is done with and without glasses. Such measurements are done twice monthly on squint cases having orthoptic training. In this way accurate determination may be had of the progress or lack of it, in lessening the angle of the squint or the phoria.

If now one measures the same case by having the child fix on a light or a dot the difference in the angle of the squint may be most surprising. In fact there may be no demonstrable squint, while with accommodation stimulated the angle of the squint may be 30 to 40 or more prism centrads.

It is essential of course that the squinting eye be able to fix and that there is not a false macula. In such cases one must rely on the perimeter measurements. It is very important to measure the angle gamma as a routine measure. Embarrassments will be prevented by so doing.

It may be that the orthoptic exercises teach such patients to use their accommodation at will. Thus, when without correction, they do not use their accommodation; when however they wish to see objects distinctly, as in reading they accommodate and the squint manifests itself. Probably many cases are measured and found not to have a squint when they would have manifested such squint if the accommodation had been properly

stimulated while being tested. In the past such cases have been thought cured when they were not.

There is another classification of cases in which orthoptic exercises may not only do no good but may be disadvantageous. I refer to some lateral deviations that have associated with them vertical deviations. In my experience many of these cases cannot be perfectly cured. That is to say, they will not be able to obtain binocular single vision and stereopsis. The best that one may hope for in many such cases is to secure a cosmetic result by means of surgical procedures. If by means of orthoptic exercises, atropine and occlusion we have succeeded in obtaining normal vision in each eye and have created a desire for fusion, we may have produced in this patient diplopia or an extreme desire for fusion which he cannot attain or *attain only with extreme effort*. Therefore, before one places such cases under orthoptic treatment, one should determine by careful study whether it is possible by means of surgical procedures to correct the deviation precisely enough to enable the patient to secure binocular single vision with orthoptics. Such vision should not be maintained at the expense of too great effort for obvious reasons.

It should be the desire of the ophthalmologist to cure a squint without the use of glasses. If the patient has a low degree of vertical deviation *with a desire for fusion* it may necessitate the wearing of glasses continuously throughout the patient's life, with prisms incorporated in them to correct the vertical imbalance, in order to obtain comfort. My opinion is that it would be better for the child to have a good cosmetic result without the use of glasses, rather than binocular single vision and stereopsis, if the continuous and constant wearing of glasses be necessary to accomplish this. It may be necessary for the child to wear glasses continuously to correct an error of refraction. Under such circumstances the wearing of low degree prisms incorporated in the lenses would be acceptable.

If it is decided not to attempt to secure binocular single vision by the use of orthoptics, occlusion should be practiced to prevent or relieve amblyopia. This latter is important since the fixing eye later in life may develop poor vision due to injury, disease, cataract, etc.

It is not my intention in this discussion to minimize the value of orthoptic measures but one may become over enthusiastic, and attach greater value to its use than it possesses. *It is an adjunct* to the treatment of squints and phorias. Do not let us fail to appreciate its value. We should however not overestimate the effect produced nor consider it a cure-all. It is a valuable aid to the other measures we have at hand.

In convergent squints of moderate degree, approximately 15° in which there is no vertical deviation or other complicating condition, we may benefit some cases and cure some but from my small series of cases, which have been given the utmost attention that it is possible to give, I am not over enthusiastic as to the cure of a large percentage of squints by orthoptics alone.

We have treated squints I believe in the approved modern methods, using the amblyoscope, the stereoscope, the cheiroscope and the synoptophore. It would seem advantageous in order to carry out the treatment properly to use appliances of this type. Certain cases can be treated to greater advantage by one type, whereas another requires a different instrument or a combination of instruments.

There is a good deal yet to be known about the underlying causes, the physiology and the mechanics of squint. In my opinion Jameson has made some real advances in our knowledge of this subject in his classification of convergent squint.

In a high degree of hypertensive convergent squint it would scarcely be practical to use orthoptic measures until the angle of squint has been reduced by recession of one or both median recti. Likewise in a high degree of convergent squint due to relaxation of the lateral recti it would be labor lost to attempt correcting exercises until shortening of the lateral recti had been done and the high angle of squint at least in part corrected. That is to say, one could not expect cure of such eyes from orthoptics alone. It would be proper to begin the exercises and continue with vigor and enthusiasm until the operation could be done. We would have then gained much time in the treatment of the squint. Post operative continuation of the exercises would result in the early cure of heterotropia.

Measuring squint by the method used by Dr. James Watson White is invaluable, particularly in determining the vertical deviations. Unless one uses some such method in measuring the deviations in six fields, one may easily overlook a vertical deviation. Such deviation may not be of sufficient degree to be measured or noticed in the primary position, when a young child's eyes are being studied *where only objective findings are possible.* Measuring the angle of the squint on the perimeter is unsatisfactory though it should be included as it gives information of value. Measuring with the cover test and the use of prisms in six cardinal fields, at the same time stimulating the accommodation, is essential to the study of the case. This method will bring out the full value of the deviation. It will tell us the *real* improvement that is taking place as a result of the orthoptic training, measured accurately in prism centrads. I am unfamiliar with any other method which will give such accurate record of progress, or lack of it, in orthoptic training.

The accommodative type of squint may be entirely corrected by glasses; fusion amplitude and good abduction may be obtained by orthoptic treatment but the squint is not cured and returns upon the removal of the glasses. If these cases are operated upon, after the glasses have been worn for sometime, we may have a divergent squint with the glasses and a convergent squint without the glasses. Such cases offer a difficult problem since it is one's desire to cure squints without making it necessary for the child to permanently wear glasses. If one secures a cure at the expense

of wearing glasses permanently one may question whether the cure is not as bad as the disease. Experience with this type of case suggests that if they are operated upon early, before the accommodation has been broken down by the continuous wearing of full correction, we are more likely to have a satisfactory result than if we attempt to give the full hypermetropic correction with or without bifocals and continue them for any considerable length of time. The continuous wearing of the full correction seems to teach the patient to control his accommodation. Thus without glasses, in order to prevent himself from squinting, he will keep his accommodation relaxed, until he desires to see an object clearly, either for distance or near. Then he will bring into use his accommodation, one eye will squint and he will temporarily suppress the vision in this eye, meanwhile seeing clearly with the other. Since we have improved the vision and secured fusion and stereoscopsis by orthoptics, occlusion and atropinization, it may be that it is more uncomfortable for the patient to squint because of diplopia. If he uses his accommodation he squints and thus induces diplopia. Consequently he does not accommodate. Thus, without correction, he goes about with greatly reduced vision, accommodating only when necessary to see clearly for the moment and squinting when he does this. While reading he will squint continuously.

Personally I feel that the laity are very very much opposed to the wearing of glasses throughout life. They look upon this as a definite handicap and their opinions must be taken into consideration when looking at it from a practical clinical standpoint. If there is any possible way to cure a squint without the necessity of wearing glasses we should do so. The problem of treatment for accommodative squint is one for which I have found no entirely satisfactory solution.

In some of the discussions of squint reference is made to development of vertical deviations after treatment and operation and the matter seems to be rather lightly dismissed by saying that this can be corrected by incorporating prisms in the glasses. As mentioned above, one does not wish to make it necessary for the child to wear glasses continuously and especially if the patient needs them only for the correction of the vertical deviation. Furthermore, one should study seriously these vertical deviations, which may have been present all the time but not recognized. They are a powerful factor in the production and continuance of a squint, rather than occupying a secondary role. One should very carefully check the deviation in the six fields; this can be done with even very small children with the prisms and cover test and while they are accommodating fully. It is the only accurate way of measuring a squint in a young child. Perimetric measurements are misleading and inaccurate as compared with the prism measurement. The latter method however takes time and requires considerable patience and diplomacy on the part of the operator and his assistants.

The character of the squint should be very carefully studied and also the character and extent of the excursions of the eye and the same of abduction and adduction. The excursions should be noted, particularly in the upper right, upper left, lower right and lower left corners. It is in these positions that we observe evidence of disturbance of the elevators or depressors.

It is thought by Duane, White and others that the vertical muscle most commonly complicating a lateral strabismus is the superior rectus. Next in frequency is the inferior rectus. The superior oblique and the inferior oblique are less frequently paretic but are affected more frequently than the literature would lead one to believe.

As before mentioned where vertical deviations are present they may materially alter the prognosis. Some of these cases offer the possibility of cosmetic cure only. In others, if the patient will submit to several operations, it may be possible to obtain binocular vision. This is a matter of very nice judgment on the part of the surgeon.

In high degrees of vertical deviation the permanent wearing of prisms would be impractical. Slip-over prisms may be used temporarily during orthoptic treatment to attempt to overcome the hyperphoria. Since these hyperphorias are largely due to paresis of the vertical muscles it is probable that the permanent wearing of prisms will not give satisfactory results since the hyperphoria varies in the different fields. Some advise the correction of such hyperphorias with the slip-over prisms until the deviation is constant.

Such constancy of the lateral deviation will occur after varying periods. The vertical component may become comitant, i.e., constant or it may be so upon the first examination. It is not always easy to determine this even with the highly efficient and satisfactory method of White. Children differ greatly in their ability to fix accurately or long enough to enable one to always exactly measure the deviation. Hence, it is not always possible to say the deviation has become constant.

A vertical deviation of low degree which is comitant can easily be corrected by the permanent wearing of glasses with the proper prisms incorporated in them or obtaining such prismatic effect by decentering the lenses. As before noted, this necessitates the wearing of glasses permanently and continuously which is particularly undesirable in childhood and adolescence. One must accentuate the fact and be sure that the handicap of the glasses is not greater than the disorder for which they are prescribed.

We are fully aware of the possibilities of relapse of the squint after the eyes have been made straight through orthoptics or orthoptics and surgery combined. This unfortunate sequel may occur more probably in those cases of lateral squint combined with a vertical deviation. The latter complicates the situation and renders it more difficult to evaluate treatment and cure. Only a phoria may remain after the squint has been cured. These phorias

may be as difficule to cure and cause more symptoms than did the squint. The asthenopia resulting from a phoria may be most severe in its various manifestations. This is so well known it requires no comment. In those phorias, which have been spoken of in a previous paper, as essential phorias, operations will probably be indicated. By essential phorias is meant a comitant and constant phoria, uninfluenced by glasses, orthoptics or other treatment and having no cause other than the essential muscle imbalance and remaining the same amount under all conditions. Let me reiterate, that we may have fusion and stereopsis brought about by orthoptics both in squint and in phorias but the angle of deviation may remain the same. The good we have occasioned is open to question. The acid test of what we have accomplished is improvement of the angle of squint or the phoria while the patient is *fully accommodating at 6 M. and 33 cm.* It is possible in low degrees of comitant vertical deviation to correct it with prisms but it is not practical in high degrees.

One can put a varied construction upon the terms "cured" and "improved." A perfect cure without a remaining phoria and with fusional amplitude is unusual in my experience.

Fusion training may be begun even though amblyopia is still present. In these amblyopic cases the child *while in the clinic* may have fusion, particularly if the vision of the two eyes is approximately made equal by proper measures. In every day life, however, this child may have monocular vision. Such cases may be corrected cosmetically by surgery and *in the clinic* found to have binocular vision with fusional amplitude but they probably do not have it elsewhere. We should remember that the tests in the clinic for binocular vision and stereopsis are made under highly artificial conditions. The squinting eye is stimulated to function by all means at our disposal. Under these conditions we may secure what for the moment is satisfactory coordination of the two eyes. We have no assurance that this is continuing when the child leaves the clinic. As a means to assist in the cure of the squint the stimulation of stereoscopic vision is important. Aside from this except in aviators and those requiring a perfect estimation of depth perception, this question may be academic. We are not aware how universal is perfect stereoscopic vision in so called normal people.

In come cases overcoming suppression is a difficult matter, in association with the amblyopia. We must remember that there are time limits to which we can submit the patient to orthoptics and other treatment. In the treatment of these cases one must be guided by many factors, one of the most important being the cooperation of the mother. One should operate earlier where it is obvious the cooperation is poor.

There is difficulty in getting patients to cooperate for a sufficient length of time in many instances. I am referring particularly to private cases. In many the economic question does not enter into the problem, so that is not a factor; but the Mother tires and loses interest or has other import-

ant things to do and comes to lack enthusiasm; consequently the full coöperation of the child is lost. This is a real problem in this work and may not be dismissed by a few words. In those who will coöperate one may expect much better results. Many cases give no result because of this lack of coöperation. A great many will begin the exercises and then drop out. In my private work we get cooperation from about 70% of cases which means 1/3 of the cases are unimproved because of lack of cooperation.

It has been our experience that orthoptic training in the phorias is of value, particularly in duction training with the synoptophore in the clinic, and exercises with prisms by the patient at home. With these measures they make rapid progress in many instances. It seems to be particularly valuable in the treatment of esophoria, especially that form of esophoria due to divergence insufficiency. The power of divergence can be satisfactorily increased and stimulated by the synoptophore. In esophoria due to convergence excess it is less likely to change the degree of the esophoria. In both instances the symptoms may be improved but the degree of esophoria may remain the same. In certain cases which I have termed elsewhere essential esophoria, nothing short of operation will effect a cure.

In exophoria due to convergence insufficiency we have a very valuable aid in orthoptics in building up the convergence power. The convergence power can in many instances be rapidly increased. In exophoria due to divergence excess less effect may be expected since the convergence may be normal. We can increase convergence power but this does not effect the overactive divergence and the degree of exophoria remains the same. Reduction of the divergence by surgical procedures is usually necessary. Here our theory of divergence excess and convergence insufficiency is not borne out by facts. In an exophoria due entirely to divergence excess it is necessary to do a shortening of advancement of one or both interni as well as a recession of one or both externi. Such cases have been referred to in a previous paper as essential exophoria.

One should carefully watch the changes in refraction in young children. It does not appear that such changes are induced by the exercises. Following Jackson's suggestion it is our habit to use instead of atropine for the refraction of children with squint, one drop of scoplamine 1/5 of 1% in the office; usually after one hour the refraction is proceeded with. This saves patients from returning who live some distance away and the cyclopelgia seems to be sufficient. The hypermetropia tends to decrease in young children as they develop and hence the glasses may become too strong. This may take place within a year. Myopia tends to increase. Consequently we should carefully go over the refraction of young children not less than once a year. In hypermetropia the overcorrection may induce amblyopia ex anopsia and hence may defeat the very purpose for which they are worn.

The surgeon should enter into a full explanation to the parents. A simple and understandable explanation of squint should be given them and an outline of the treatment necessary and the probable time that it will

take to effect a cure. This is an important step in the beginning of the treatment and will result in securing much better cooperation from the parents and hence from the child.

Careful measurements of the angle of squint with the accommodation stimulated is essential to the knowledge of the progress of the case.

The profession should use this valuable therapeutic aid, which has fallen into the hands of the irregulars who know not its value, cannot estimate its application and may use it for commercial aggandizement.

The first examination of the child is very important. We should not force too much on him at this visit. If we succeed in getting a careful measurement of the angle of the squint, some idea of the visual acuity and a look at the fundi with the ophthalmoscope, we have accomplished as much as we can hope to accomplish at one sitting. Further investigations should be made at subsequent visits.

It is hardly necessary to state that children with squint should be under treatment as soon as the squint is recognized. One important reason for this is that the child may be relieved of wearing glasses as early as possible.

I repeat, the need for relieving the child of the necessity of wearing glasses at the earliest possible moment is important. Many opthalmologists do not appear to realize the tremendous handicap glasses are to a child. He is exposed to the jibes of his companions, he is kept out of certain athletic activities of school life which places him in a position where he is different or separate from his companions. Obviously the psychic effect of this is bad. It is only one degree less bad psychically and physically than the squint itself. Every effort should be made to cure the squint *without glasses before the school age*. For this reason orthoptics should be pushed with energy, enthusiasm and determination. The results should be carefully checked at short intervals and if it is obvious that real improvement is not taking place, surgery should be resorted to.

As noted before, straight or approximately straight eyes *without glasses* are to be preferred to binocular vision and stereopsis which to maintain necessitates the wearing of glasses.

In 1921 Claude Worth observed "that fusion training was not for the purpose, nor expected to reduce the angle of the squint but to aid the effect of the operation." I think this rule should be borne in mind—our enthusiasm may lead us to extremes.

Orthoptic exercises are valuable for securing fusion, stereopsis and improvement of vision, the stimulation of convergence and divergence but the angle of squint is not necessarily improved.

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NON-CYCLOPLEGIC REFRACTION

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Surgery is the spectacular part of ophthalmology and some phase of the subject forms the basis of a large number of papers read before the sections as well as those appearing in our journals. With most of us however, refraction consumes the greater part of our time and is the most constant and unvarying source of our income, notwithstanding we look upon it as we would upon a dead language, with nothing to be added or subtracted.

In our teaching institutions we are taught a method of refraction which we accept without question as the last word on the subject, and many of us follow this technique without any variation through our professional lives, while others follow it closely for a while and then perhaps modify to suit their convenience and ability as well as the changed condition from clinic to private practice.

In my course on refraction under Dr. Thorington I was taught that retinoscopy, when properly done, was the most accurate and scientific method, which we had at our disposal, for measuring the full error of refraction. At this time we used atropine as our cycloplegic and by its use obtained complete paralysis of the ciliary muscle. It naturally followed that our measurements, taken under various conditions, were always the same. Atropine cycloplegia still remains the standard by which all other methods are compared.

From the beginning of my private practice all patients were retinoscoped regardless of age, cycloplegics being used with children and young adults with presbyopes a mydriatic such as cocaine was found sufficient to dilate the pupil so that a large retinal reflex could be obtained. During the examination the patient fixed his vision on the forehead and this short focus called for efforts of accommodation. In attempting to secure complete relaxation of the ciliary muscle by use of homatropine, much time was consumed and many unpleasant experiences were encountered. To remove the element of doubt from my practice I would frequently use atropine and even now when I find it necessary to use a cycloplegic I prefer that which places the accuracy of my findings beyond question.

After a few years of refracting in the conventional way I found that I, was retinoscoping all patients without the aid of a mydriatic or cycloplegic. As a check on the younger patients it was usual to do a subsequent retinoscopy under cycloplegia and in this way a general idea was obtained of its possibilities and limitations.

After extensive observation and especially after comparing my results with others who use drops exclusively, I found the cylinder correction usually the same by either method and then on an average, half a diopter more of hyperopia was revealed by a cycloplegic. With the advent of the

luminous retinoscope which gives a brighter shadow and allows work in a darker room, the reverse is quite often observed, the patient showing half a diopter more hyperopia without, than with a cycloplegic. Borden Cooper's explanation of this phenomena is that under cycloplegia there is a forward displacement of the lens system as a whole and consequently a lessening of the hyperopia or in other words, a relative myopia.

The non-cycloplegic method which I now use almost exclusively and have used for a number of years, is to work in a moderately dark room using the luminous retinoscope. The patient is directed to fix on something in the distance, the fixation target being some large object without detail, as sharp vision calls for accommodation. One of the most important factors which contributes to the accuracy of our findings is this fixity of observation on the part of the patient.

If the vision is allowed to constantly change from one object to another, or if we are attempting the work in either a lighted or small room using the illuminated chart as a fixation point, then relaxation of accommodation can not be expected because the essentials of success are lacking.

The handling of the lenses before the eyes is another detail which must receive careful consideration or our best efforts will fail. With the patient looking in the distance, with both eyes open, we place plus lenses before each eye and try to maintain uninterrupted over-correction. Distant vision is to be kept blurred but not eliminated by too strong a glass. Accommodation is slow to relax if the eye is blinded but when distant vision is rendered just indistinct, then the only way it can be cleared is through relaxation and we encourage the eye into a state of rest instead of trying to force it.

Under the above conditions we have the requisite for the greatest relaxation of the ciliary muscle, and accommodative control close to that of cycloplegia or as near to that as can be had without the use of drops.

Using this method we note the gradual relaxation of accommodation, and as this takes place we increase slowly the strength of the lenses. As they are changed we replace them carefully in the trial case, and by so doing we are not only given time for the ciliary muscle to relax but cultivate a neat and orderly technique. If at any time we find one eye considerably more hyperopic than the other, then we increase the strength of the sphere before that eye, for if one eye is allowed to accommodate, then accommodation occurs in both.

When the principal meridian of each eye is corrected and we find that astigmatism is present, it can be quite accurately measured by placing cylinders at the proper axis, making the necessary changes until this meridian is also neutralized. Neutralizing shadows by spheres alone is crude retinoscopy and does not permit accurate axis determination.

If the examiner by reason of his experience and skill, has been successful in obtaining maximum relaxation of accommodation and can depend

upon his work, then he has a fairly close check upon the total error and can come to the trial case in much the same position as one who has determined the error under a cycloplegic.

This method of retinoscopy, like any other, should not be depended upon entirely to take place of the subjective examination at the trial case, but its preliminary use as a path-finder will greatly facilitate the examination and lessen the labor of refraction for both the examiner and patient.

Those interested in this method of retinoscopy may ask at what age it may be successfully used? From personal experience I would say that age is not the determining factor but the behavior of the patient and the relaxability of the accommodation. When relaxation is poor or accommodative control irregular, a cycloplegic will save much time and add to the accuracy of our findings. This condition is most often met with in the illiterate, and in young children whose intelligence is not sufficiently developed to cooperate with the examiner.

As to the relaxability of accommodation, there is no way of determining in advance which patients will offer resistance. Some presbyopes with little accommodation, often respond less to over-correction than children. Those who use the eyes constantly during the day for close work, would be expected to be poor cases for non-cycloplegic retinoscopy; this is not the rule however, but the exception. We have long since found that the number of cases of spasm of accommodation is greatly over-estimated and that there are other factors than the behavior of the patient, to determine the success or failure of this method, the most important of which is the skill and experience of the examiner.

The principal difficulty for the beginner is the small shadow of the undilated pupil, but this shadow though small is clear cut and more dependable, because you are working in the central visual zone which is free from the conflicting shadow movements of the periphery. A pupil of four millimeters has a regular refraction throughout its area, and if it presents astigmatism it will be the same in its different parts so that a sphero-cylinder lens gives a complete correction.

Another difficulty for the beginner is the ability to judge what the ciliary muscle is doing or is capable of doing. Real expertness for this will seldom be acquired without considerable study and routine use of the method, followed in all doubtful cases with a complete examination under a cycloplegic.

Retinoscopy by whatever method or by whomsoever done is accurate only as it agrees with the subjective examination at the trial case, which is sovereign under any condition.

The technique at the trial case will not differ materially from the fogging method which you are accustomed to use in your post-cycloplegic examination. Under cycloplegia both the spherical and astigmatic error are constant as long as the cycloplegia lasts.

In non-cycloplegic refraction the spherical error is variable but the cylindrical error may for practical purposes, be considered constant, so it is my custom to correct first the astigmatic error. With the cylinder correction in the trial frame the refractive error is reduced to simple hyperopia or myopia and with this correction before the eyes I again use the retinoscope and check against my first observations.

In this second examination we obtain a fairly accurate estimation of the total hyperopia or myopia but no single method of refraction affords sufficient information for the satisfactory prescribing of glasses, therefore as a check upon our retinoscopy and to make more certain our total hyperopia, I occasionally use the all blurred method of refraction which is known as cyclodamia. In this method of refraction no part of the relaxation obtained by over-correction is lost to sharp vision. It differs from the bilateral fogging method and is much more dependable.

By the fogging method we try to find the strongest lenses through which sharp vision can be maintained, but very often the sharp vision calls for accommodative activity with the result that our total hyperopia is only approximated. It can be said however, that good bilateral fogging often reveals more of the hyperopia than should be immedately corrected.

There is much more to refraction than just measuring the spherical and astigmatic error, but in the short time allotted to our papers it is impossible to speak of more than the commonest phases of the subject at hand.

In the last few years there has appeared in our journals, from time to time, many articles on some form of non-cycloplegic refraction and most of the writers seem to be agreed that cycloplegics are essential in squint cases and in the refraction of all children. This is true but there are exceptions. Some children cooperate perfectly in both the objective and subjective examination and if given an intelligence test would outstrip many of several times their age.

In conversation with an oculist, a few days ago, he advised against claims for ability to refract properly any child, without the use of drops. I would like his impression on this case which came to my office the following day: A boy eight years of age with poor vision. Non-cycloplegic retinoscopy was done and a plus seventeen lens was needed to stop the shadow movement. There was almost no astigmatism and no squint. What additional help would I have gained by using drops and uncovering half a diopter more or less of hyperopia when I had more in sight than I cared to immediately correct.

The advantages which I have found in non-cycloplegic refraction is that it gives a quick estimate of the total error and in the hands of the experienced it almost eliminates the necessity for the milder cycloplegics with their uncertainty and inconvenience.

Another advantage is in the handling of patients from a distance. The examination can be completed in one sitting and we have the opportunity

of seeing the glasses on the patient and knowing that they are properly fitted and comfortable.

The greatest help from the use of this method is that it shows us when a reliable cycloplegic is positively indicated and thereby eliminates the necessity for the routine use of drops and gives the examiner the opportunity of developing his own skill and resources.

Cycloplegics may be used for patients of any age, if there is a definite indication for their use, but the older the patient the more painstaking the preliminary examination should be. Only a few years ago we were taught that cycloplegics could be used with reasonable safety in adults up to forty years of age but my experience has taught me that, with the average oculist, damage is more likely to occur with patients under forty than over. It is hardly probable that any oculist would use a cycloplegic with a patient over forty without first ascertaining if there is contra-indications, but with children and young adults we often see drops used routinely without preliminary examination.

The point which I wish to make is well illustrated in the following case which was refracted by one of our State's busiest oculists. The patient, a male thirty-four years of age, with the following history: Was refracted six weeks previously and during this time had been back to his oculist three times, complaining that he could not see clearly, in fact he did not believe that he saw as well as he did before he got the new glasses. Each time he was told that the glasses were all right and that if he would continue to wear them regularly, things would soon become clear.

When he came to me I found the pupils of each eye five millimeters and quite inactive. Vision of right eye was 20/20, tension forty, taken with McLean tonometer, field contracted one-fourth. Vision of left eye was 20/60, tension sixty-five, field contracted one-third. Each disc showed marked glaucomatous cupping. One percent pilocarpine was given with instructions for sufficient to be used every four hours to keep the pupils contracted to a pin point. After a moment's hesitation he remarked, "If it's necessary to keep the pupil small, then the drops which the doctor put in when he examined me for glasses could not have done them any good, he had my pupils so large that for several days I could hardly see and in fact it doesn't seem to me that I have seen as well since." From the history given by the patient and from the fundus changes we are reasonably sure that this patient had a simple chronic glaucoma for a long time before his unpleasant experience with his oculist and that drops were used without a fundus examination and perhaps with the mistaken idea that glaucoma is only to be considered in more advanced life.

Quite frequently some young adult will call my office and inquire if I use drops in the examination for glasses. If they have objections they inform us that at some previous time an oculist had examined them using drops and since that time the eyes have not seemed as strong. We have all

heard similar remarks and I wonder if we are in the habit of placing them in the class with neurotics or if we examine with sufficient care to see if their claims are substantiated facts.

Cycloplegics are well tolerated in the glaucomatous eyes of young adults but the fact that we do not always have an acute inflammatory attack to follow their use is not proof that a potential glaucoma is not present or that drops are entirely harmless.

I do not wish to over-emphasize the disagreeable features resulting from the use of drugs in refraction or to under-estimate their value in complicated cases, but I do believe they are used entirely too often for the good of the profession.

Some men using them regularly are doing excellent work as reflected by the extent of their practice; others not using them at all have an equally large following. Success will come to those using either method if they are careful and accurate in each step of the examination. Some of the older men with large established practices, built up under one or the other method of refraction may well follow their accustomed technique for like Ephraim of old, they are, "Joined to their idols, leave them alone."

The young oculist will find that there is little else that will offer such a wealth of opportunity for good as does expert refraction and he should select the method which for him gives the best results; if a cycloplegic is necessary for him to do his best work, then by all means he should use it.

There will be many cases, which for practical reasons, it should be omitted. To care for these cases some form of non-cycloplegic refraction must be used and the success will depend upon the thorough, painstaking effort which is put into the work. With experience he will, in an increasing number of cases be able to avoid the annoyance, for patient and examiner, of routine cycloplegia and by fitting glasses under the same conditions which the patient lives and works, they will be more apt to make the average person comfortable, for after all, the important thing in refraction is to prescribe glasses that can be worn with benefit and comfort.

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OCULAR TUBERCULOSIS

By Dr. V. M. Hicks, Raleigh

It is not the purpose in this short time to discuss all phases of ocular tuberculosis. Sixteen years ago when I entered the specialty of oppthalmology there were perhaps a majority of our best known specialists who did not believe that such a disease as ocular tuberculosis existed except in

rare instances. It is quite true that there still are a number of well known scientists who now raise this question. The problem has to me been a most fascinating one. It is a condition to which I have given a great deal of thought and study.

I realize it is definitely a controversial subject, but I must confess that I have always strongly felt that there are and have been many cases of ocular tuberculosis that have gone undiagnosed and untreated much to the detriment of the patient.

Perhaps the strongest case made out against the existence of ocular tuberculosis is the Presentation by Goldenburg and Fabricant[1]. In their series there are reported 1,200 cases of active pulmonary tuberculosis. Practically no cases of ocular tuberculosis were found. In the 25 cases in which ocular disease was found they were not satisfied that any were tuberculosis. They further agreed that if ocular tuberculosis existed it should appear commonly in proved cases of pulmonary tuberculosis just as eye lesions due to syphilis only appear in the syphilitic.

Goldenburg and Fabricant consider the Focal reaction to tuberculosis valueless.

William F. Petersen[2], University of Illinois, said: "We inject a moderate size dose of tuberculin into a tubercular individual and we promptly find signs of activitation at the focus, increased vascularization, increased productivity, etc., and we conclude that this reaction must be purely specific, a fallacy so thoroughly impressed on the medical mind that it is impossible to eradicate it. Practically every extract of the glycinerated bouillon in which tubercle bacilli have never been grown will produce a tuberculin reaction. Many substances produce a tuberculin recation about a tubercle and, conversely, tuberculin produces a tuberculin reaction about many other inflammatory foci that are not of tuberculous origin."

Dölter[3] obtained a positive tuberculin reaction in children by intracutaneous injection of glycinerated bouillon. Dr. Potter[4] injected tuberculin and various non-specific substances into tuberculous patients and concluded that the reactions were similar. Goldenburg concludes that in instances where ocular tuberculous lesions exist they are probably due to the localization of an embolic focus of the tubercle bacillus, which can take place only through the blood stream.

This evidence, strong though it may be, can hardly withstand the overwhelming proof that appears all through the literature of the frequent existence of ocular tuberculosis as a distinct pathological enterity and generally not associated with pulmonary tuberculosis.

I am convinced that there are two distinct types of ocular tuberculosis: (1) Toxic—due to the attack of toxins from tuberculous lesions elsewhere in the body, and (2) definite tuberculosis caused by the existence in the eye tissue of tubercle bacilli.

We are all agreed that tuberculosis affecting the posterior segment of the globe is secondary to some other body lesion. The types here generally encountered are: (1) Miliary tubercles; (2) Solitary tubercles; (3) Retinitis of the proliferating type.

Any portion of the anterior segment may be affected. Keratitis and scleritis are the more common. In recent years it has been discovered that many of the formerly undiagnosed cases of uveitis are tubercular. Wilmer[5] analyzed a group of cases of uveal inflammation and found that tuberculosis was the cause in 42 per cent and in a group of chorio-retinitis, tuberculosis was the cause in 44 per cent. Verhoeff[6] went so far as to say that "Ordinary scleritis and keratitis; that is to say, anterior nodular scleritis; are always due to tuberculosis." Verhoeff further points out that in a majority of cases of chronic ocular tuberculosis the internist discovers no evidence of systemic tuberculosis. That is undoubtedly true. "In cases in which the internist has failed to find evidence of tuberculosis I have examined enucliated eyes microscopically and found them to be tuberculous. I have also examined pieces of iris obtained by iridectomy for secondary glaucoma and have found that the iris contained tubercles. On the other hand, the converse is also true; namely, patients with active pulmonary tuberculosis are not likely to have ocular tuberculosis. When they do, the ocular involvement is apt to be of a severe type and lead to loss of the eye. Massive tuberculosis of the iris or choroid is so rare that few ophthalmologists ever see it. For these reasons it seems to me unwise to draw the conclusion that tuberculosis is an infrequent cause of chronic diseases of the eye."

The use of tuberculin as a diagnostic measure is becoming more universal as new and more reliable methods of application have been developed. The correlated experiments and opinions of the most profound students of tuberculosis such as Koch[8], Pirquet[9], Calmetti[10], and many others prove that two distinct tissue responses occur following the development of an organized tubercle in the body. These consist of the development of a bacterial immunity in which the usual antibodies can be demonstrated, and in addition, hypersensitiveness and allergy, demonstrable by the reaction of the tubercle organisms. These by-products are chemically complicated substances consisting of nucleoproteins, carbohydrates and fats, and are designated as tuberculin.

The tuberculin test may be performed according to several technics. The most popular are Pirquet, Mantoux or intradermal, and subcutaneous tests. I prefer the intradermal because it is safer and more sensitive. In this test dilutions of 1:100,000 and 1:10,000 and 1:1,000 are used. The preparation must be fresh and care taken that it is injected directly into the epidermis. The test is read at intervals of 48 hours and reported in terms of plus or measurements of the degree of redness and induration. All tests are controlled by giving an injection of saline diluent.

According to Eggston[11]: "The significance of the test is as follows:

1. A negative test indicates—
   (a) The patient has had no contact or tissue reaction either to dead or to virile tubercle bacilli.
   (b) As it takes from four to eight weeks for the test to become positive it is possible that the test may have been made in the incubation period, just as a negative Wassermann reaction may be obtained during the chancre period of syphilis.
   (c) The patient's body may be so overwhelmed by the infection that no sensitization or immunity to the tuberculin has developed. This occurs frequently in children with general miliary tuberculosis.
   (d) The test may have been rendered negative by a severe illness, accompanied by a high temperature, or after influenza, measles, pneumonia, etc.
   (e) The test becomes negative after the therapeutic desensitization injections of tuberculin.
   (f) The tuberculin may be inert, or may have been improperly injected.

2. A positive test indicates that the patient has had or is having tuberculous tissue reactions, to either dead or virile tubercle bacilli, however small or in whatever location of the body, but not necessarily in the organ producing the symptoms of which the patient complains. As many patients complaining of ocular symptoms react to tuberculin, which is also true of patients in normal health, some ophthalmologists erroneously conclude that the ocular lesion is tuberculous."

Tuberculin as a therapeutic agent has, in the past, had its ardent advocates in practically every specialty of medicine. It has also had its equally ardent critics. The critical attitude toward the use of tuberculin seems to be in the majority at present, and its use has been practically discontinued with the exception of its use in ophthalmology.

The method of treatment used in ocular tuberculosis depends on the attitude of the physician. If a non-specific form of treatment is desired the method I have used is wrong. My understanding of non-specific treatment is that a violent constitutional as well as a focal reaction is produced. The result of such a local reaction in the treatment of ocular tuberculosis might be so disastrous as to require enucleation.

The preparations used are usually Köch's old tuberculin beginning with the dose of 1-1,000 mg., Tuberculin Residue 1-110,000 or Bacillus Emulsion 1-10,000 mg.

My experience has caused me to favor the use of tuberculin residue which can be procured in six dilutions. In the first dilution each 2 min. contains 1-10,000 milligrams. In the sixth each 2 min. contains 10 mg.

Depending on reactions the dose is gradually increased, but is spread at about two doses a week throughout the treatment. The real important point in the treatment is to give dosage that will build up immunity but will fall short of a manifest local or general reaction. If either is encountered the size of dosage is greatly reduced and gradually brought up again. The period of treatment varies from six to 18 months and may have to be repeated by a recurrence of symptoms one or more years later.

Kolmer's[12] deductions are interesting: "We have seen that the tuberculin reaction is accompanied by the production of hyperemia and serous and cellular exudation. It is commonly believed that we recover from tuberculosis by the production of fibrous tissues around the foci. It is a well known principle of pathology that chronic passive congestion is followed by fibrosis. Tuberculin in proper dosage and spacing of injections can elicit a series of mild allergic shocks about the focus of disease maintaining a more or less constant degree of hyperemia. Evidence indicates that this is followed by fibrosis and fibrosis is greatly desired. Therefore, in chronic tuberculosis where the lesions are localized in a certain organ or organs, the administration of tuberculin is advantageous. In miliary and disseminated tuberculosis it may not be, or its curative effects may be too slow to prove of benefit."

Three cases are here briefly reported. I report them for the reasons that they present some of the problems already discussed and because I have followed them over a number of years. It is my desire to later publish quite a number of cases that I do not feel at present have been followed for a sufficient period of time.

Case 1. E. H., a woman, age 21. Occupation, school teacher. First seen February 12, 1923. Chief complaint—right eye painful and red for over three months. Unusually well nourished and in good health. During the past three months has been given treatment for iritis. There is nothing in the family and personal history that could bear any relation to the patient's eye condition. Complete and careful general physical examination was made by an internist. This included blood and urine studies. The examination was negative throughout. Ear, nose, and throat examinations failed to show a focus of infection. The tonsils had been removed and the teeth were sound. X-ray examination showed no gum or apical infection. X-ray plates of the chest were negative.

Examination of the right eye showed evidence of photophobia, lachrymation, and blepharospasm. Vision 20/200. The lids were normal and lachrymal sac not infected. The conjunctiva was mildly congested and there was considerable deep and superficial circumcorneal injection. The cornea was involved by a large infiltration of the deep corneal stroma to the nasal side and extending wedge-shaped to near the center. There was some deep scleritis at the base of this wedge. The pupil was partially dilated by the previous use of atropine. The anterior chamber was clear

but the iris was swollen. The fundus could be fairly well seen and there was no evidence of involvement. The left eye was normal throughout with normal vision.

The tuberculin test was 3 plus. In view of the absence of any positive findings except with the tuberculin test and because of the long continued illness together with the peculiar corneal involvement with the accompanying scleritis the patient was placed upon ascending doses of tuberculin residue. The dose was given every third day and the patient watched for any local or general reaction. Without any other treatment the eye was free of pain and other symptoms and the vision was beginning to clear nicely in two months. The improvement continued gradually and the treatment was followed for 18 months. At the end of this time the eye was quiet and nothing remained except a mild deep scarring of the cornea. The vision was 20/40.

In July 1928 there was another similar attack, but not so marked. Treatment with tuberculin was given for three months when the eye was quiet and the vision returned to 20/40. No attack since. Recent examination showed the eye quiet with about the same corneal scarring she has had for the past 12 years. The tuberculin test is still positive. The chest examination—this time by Dr. P. P. McCain, including X-ray, fails to show evidence of tuberculosis. This patient will be watched for further attacks.

Case 2. L. H., white woman, age 22, weight 109, married. Chief complaint—photophobia and poor vision. The same condition existed in 1923 but cleared up when she was removed from school and given rest cure. At that time she was quite thin. The family and personal history was negative. Usual diseases of childhood with no sequelae. No typhoid or malaria. Seach for foci of infection failed to show one. The tonsils had been removed and teeth were normal. Examination by internist was negative. X-ray of chest showed arrested tuberculous infection at the apex of the right lung. Eye examination September 30, 1925. The anterior examination was negative. The cornea was clear and the iris normal. Fundus examination of the left eye negative. The right eye showed fine dust-like opacities in the vitreous. Well above the macula there was an area about one disc diameter in size which showed complete retinal and choroidal atrophy with the sclera shining through. This white crater depression was bordered irregularly by a fringe of heavy retinal and choroidal pigment. Just above this atrophic area was a small white swollen area—the formation of a fresh tubercle. There was a distinctive vitreous haze and a curious translucence suggestive of tuberculosis. Vision 20/200.

The tuberculin test was 3 plus. Because of the arrested lung lesion and the ocular lesion the patient was placed upon a forced diet, rest, sunshine, fresh air, and minutes doses of tuberculin residue. The response was rapid. In one year the patient was regarded as cured. The tubercle was healed, leaving the usual scarring. The vitreous cleared up and the macula was

not involved. Vision returned to 20/20. The weight increased to 140 lbs. and the patient feels well and strong. During the past nine years the patient has been under observation and there has been no tendency toward recurrence. Recent examination shows the eye quiet and vision normal. The general examination negative.

Case 3. D. H., male, age 55. Chief complaint—poor vision in left eye. Spots in visual field. Vision right eye 20/20, left eye 20/400.

Anterior examination negative for both eyes. Fundus examination showed right normal. Left showed a large edematous area below the macula and many vitreous opacities. Area was identical with the one reported in the second case. The family and personal history was negative. Report by internist is as follows:

Mr. D. H., Raleigh, N. C. The patient was examined by me because of Dr. Hicks finding an eye condition which he considered due to tuberculosis.

Physical Examination: Patient a well nourished and well developed adult male, about fifty-five years of age. Head—normal in appearance. Eyes—(see report of eye examination). Ears, nose and sinuses—normal. Teeth—in fairly good condition, much dental work having been done. Throat—normal. Neck shows no thyroid nor glandular enlargement. Chest—fairly well developed. Expansion fair and equal on both sides. Lungs—normal to auscultation and percussion. No rales heard. Heart—shows no murmur, no irregularity nor enlargement. Blood pressure—120/80. Abdomen—no mass, tenderness, nor rigidity. Liver and spleen are not palpable. Extremities—normal. Hmbg.—85%. W. B. C.—7,000. Blood Wasserman—negative. X-ray of lungs showed no evidence of any active tuberculosis. Urine showed no albumen nor sugar. Normal microscopically. Intracutaneous tuberculin test showed no reaction whatsoever. An intracutaneous tuberculin test done six weeks later (using the same tuberculin) showed a three plus redness of the forearm at the site of the injection.

Note: The patient has had a ruptured appendix with a general anesthetic since the original eye trouble and is normal so far as a general physical examination is concerned.

/s/ William B. Dewar.

Upon this report the tuberculin treatment was begun and continued for nine months. At this time recovery seemed complete locally and treatment was discontinued. The vision was 20/30 and nothing remained except the scarring. Annual examinations since the treatment have been given and the eye remains quiet.

Comment on Cases: The first case seems definitely one of anterior tuberculosis without any lung involvement. The period of observation after treatment assures us that there is a cure.

The last two cases are almost identical as far as the eye pathology is concerned. Yet one occurred in a young individual with some lung involvement and the other in a man past middle life without lung infection. In the second case the tuberculosis treatment must have been aided by the general treatment for tuberculosis. The original tubercle healed without the use of tuberculin, but after the treatment with tuberculin for the second tubercle there has been no tendency to recurrence. The third case is more typical of choroidal tubercles in that there was not found any other focus of tuberculosis. The original negative and later positive tuberculin test is considered proof of an active infection.

CONCLUSION

1. That ocular tuberculosis exists, no one can deny. Its frequency is a disputed point, yet I am convinced that it is much more common than we think.

2. My experience, together with that of many others, leads me to the opinion that tuberculin properly given is of distinct value in the treatment of ocular tuberculosis. It seems that the many reported cures by this method is proof enough.

Appreciation is expressed for the help given me in the cases treated by Dr. A. C. Bulla, Raleigh, N. C., and Dr. P. P. McCain. Internists Dr. Wm. Dewar, Raleigh, and Dr. H. H. Johnson were helpful in the general examinations.

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THE DIAGNOSIS AND TREATMENT OF ACUTE EXUDATIVE CATARRH OF THE MIDDLE EAR

By Dr. J. H. Fitzgerald, Smithfield

Acute exudative catarrh is one of the most common diseases of the middle ear; more common than chronic middle ear catarrh, acute or chronic middle ear suppuration. It is the fundamental condition responsible for chronic middle ear catarrh. In other words the chronic form follows the acute in untreated cases. It plays an important role in the event of a subsequent attack of middle ear suppuration because of the presence of adhesive bands that are frequently left after an attack of exudative catarrh, which interfere with drainage. These adhesive bands contribute to the development of complications of various sorts, depending upon their location. It is one of the most satisfactory diseases to treat when recognized reasonably early (within a couple of weeks after its onset) and treated in an appropriate manner.

This common condition is too often overlooked and serious impairment of hearing results. Any pathologic condition so fraught with danger to the hearing function, and yet so amenable to treatment as acute exudative catarrh invites the most careful consideration of all of us.

Since this paper is confined to diagnosis and treatment there is little room left for discussion of etiology and pathology. However, the etiology, stripped of details, leaves nothing more than a combination of predisposing factors in the form of a nasal or naso-pharyngeal obstruction and the presence of a relatively mild infection, too mild to produce suppuration.

The pathology briefly is that of a mild grade catarrhal inflammation of the mucous membrane lining the Eustachean tube and middle ear cavity, in which there is an abundance of muco-serous secretion that is at first thin, but gradually becomes thicker; however, at all times tenacious. If the tympanic cavity is not emptied of this secretion while it is reasonably thin, it becomes organized, coating the walls of the drum, tympanic cavity, including the tympanic membrane and forming adhesions here and there between ossicle and ossicle, between ossicles and near by points on the inner wall, and at times building up a formation shutting off the epitympanic space, which in turn tends to make of a subsequent acute middle ear suppuration a chronic one, limited to the attic. Sometimes the exudate organizes in the aditus ad antrum narrowing its lumen, thereby contributing to the retention of pus in the antrum and mastoid spaces. At other times it forms about the niche of the oval window causing an ankylosis of the foot plate of the stapes in the oval window resulting in a condition impossible to improve.

The diagnosis of acute exudative catarrh of the middle ear is based upon the history, the subjective symptoms and the objective findings. The history is not especially characteristic. However, the patient is usually able to recall having had a recent cold and dates his present condition

from the cold. The subjective symptoms in many cases are but few and not very severe. They are: Impairment of hearing of a moderate degree together with a feeling of obstruction or stuffness in the ear. The patient tells or admits on questioning of hearing his own voice rather louder than normal on the affected side. This is due to improved bone conduction common to all obstructive diseases. The symptoms on the whole are mild, there is no pain as is found in the more severe inflammations of the middle ear, and there is no fever. The patient is at all times an ambulatory one.

The objective findings are revealed by the functional hearing tests and by the otoscope. The hearing tests with the tuning forks reveal the characteristic findings of obstructive deafness, viz: Weber lateralized to the affected side in the case of unilateral involvement or to the worst hearing side in case of bilateral involvement. The Swabach (the patient's bone conduction on the mastoid compared to that of the normal individual) is improved. The Rinne (the patient's air conduction compared with his own bone conduction on the mastoid) is either negative or tends to be less positive than normal. Furthermore the impairment of hearing is more pronounced for low tones than for the middle, while the hearing for the high tones remain unimpaired.

The otoscopic appearances are characteristic in spite of the fact that they are variable. For instance one individual may present quite a different picture from that of another. Again the same patient may present entirely different otoscopic pictures on different days; in fact on the same day before and after Politzer inflation. Another case may show no difference before and after Politzer inflation. It is important to know the meaning of each different picture in order to determine the amount of secretion in the tympanic cavity, its consistency and whether we are going to succeed in our efforts at emptying the cavity efficiently enough with Politzer inflation to warrant our relying upon this method alone, or whether it would be better to try some other more radical measure.

It is important here to know the normal drum. This subject cannot be taken up here, as time would not permit.

The line of the surface of the fluid in the middle ear is known as the Niveau, or level line. Above this line, the cavity contains air. The drum membrane itself is not changed in color except as influenced by the color of the fluid in the middle ear, which may be slightly yellow, or as influenced by the type of light one is using. The cone of light is intact, and the drum in the early condition I am discussing is neither bulging nor retracted. The Niveau line is slightly curved upward at the periphery of the membrane probably due to capillarity since the amount of this curvature depends upon the viscosity of the fluid. For instance, the longer standing the condition, the greater viscosity of the secretion, and consequently the more pronounced we find the curvature. This line can be differentiated from a hair in the canal wall by the parallactic movement. The fluid may contain air bubbles, and these will not rise to the top or

surface in very thick fluid. Changing the position of the patient's head (leaning forward or backward) will allow the fluid to change its position, the surface attaining a level line, and the rapidity in which it changes will give some idea of the viscosity of the fluid. Also Politizer inflation may blow air into it and observation of these may give some information. The older the condition the more viscid the fluid.

The cavity may be entirely filled with fluid, and the external appearance of the drum membrane normal. In these cases we can tell that the cavity is full of fluid only by one method that I know of. That is the narrowing of the hammer handle. It is called the posterior discontinue of Brunner, and the finding or sign is due to fluid in the space of the tympanic cavity between posterior part of the shaft of the hammer handle and that part of the drum which lies external to it. When air is forced into the cavity by the patient forcibly blowing his nose, or by our inflation, and we see air bubbles, the livelier these bubbles act the better the prospects of improvement in the patient's hearing. Also the size of them serves as an index of the viscosity of the secretion. The more viscid the fluid the larger we find the bubbles and the less likely are they to reach the surface and rupture as occurs in the case of a thinner fluid in a more acute case. Sometimes the bubbles are to be seen moving around rather lazily beneath the Niveau line without rupturing and lowering it. In a case of this kind Politzer inflation is not the best form of treatment, as it would have been in the earlier stage when the secretion was thin.

Finally the exudate may have remained in the middle ear so long that it is organized and cannot be moved by Politzer inflation.

TREATMENT

The treatment of acute exudative catarrh depends upon the stage in which we find it when the patient first reports to us.

In the earliest stage, when the secretion is thin Politzer inflation as a rule will be all that is necessary to accomplish the result. In other words, when we can succeed in introducing air into the tympanic cavity with Politzer inflation, causing bubbles to form in the secretion which work their way to the surface and rupture with a consequent lowering of the Niveau line, we are warranted in repeating the procedure so long as the line continues to lower and the patient feels relief from the fullness in the ear together with improvement of hearing.

In those cases which the patient has presented himself with a very curved Niveau line and a very thick exudate we cannot expect such good results. Politzer inflation may introduce bubbles, but they will not rupture with lowering of the fluid and improvement of hearing and relief of fullness in the ear. In these cases we incise the drum and inflate. One or two large drops of yellowish thick exudate escape through the incision and the patient is amazed at the improvement in hearing and relief in the

feeling of fullness. Indication that the cavity is emptied is heard by a whistling noise as the Politizered air rushes through the tympanic cavity and out through the incision in the drum.

If no treatment is administered, a fair number of these cases drain through the Eustachean tube after it has regained its patulency. On the other hand many cases go on to organization of the exudate with adhesions of ossicles to themselves and to adjoining parts. Here it is impossible with incision combined with Politzer inflation to empty the cavity of the secretion because it is no longer mobile.

TUMORS OF THE TONSIL

By W. E. Bracket, Hendersonville

Mr. Chairman and Gentlemen of the State Medical Society:

The title of this paper should have been "Malignant Tumors of the Tonsil," instead of "Tumors of the Tonsil," as I shall not discuss the non-malignant ones other than to mention some of the more common ones found in this area. It is the malignant ones in which I am very much interested, owing to the fact that I have found them on the increase in the past few years.

I hesitated for some time about reading a paper on this subject, due to the fact that I am not connected with a large clinic, therefore do not have a large number to report. However, I have been impressed recently with the increase in the number of patients coming under my observation and I felt that it would not be amiss to refresh our memories upon the subject.

Malignant disease of the tonsil is comparatively rare, but not so rare that we should not always remember that this condition does sometimes exist. In my opinion there has been too little said in textbooks and too little emphasis has been laid upon the subject by the various nose and throat men. This is one reason for my bringing this paper to you at this time. I feel that it is fast becoming a very important subject and one that should be constantly borne in mind. The various texts merely mention the fact and list the tumors that exist, with a very meagre description of any of them. They give very little help in the diagnosis or treatment. I deeply regret that I shall not be able to present a highly scientific treatise on this subject, nor will I be able to add a lot to your present knowledge of the condition in the manner of diagnosis or treatment; but, if I am able to impress upon you the fact that an early diagnosis is the patient's only hope for life, it might not be in vain. I feel that an early diagnosis of malignancy in this area is more important than in any other part of the body. Metastasis here develops early and it behooves us to make a diagnosis in the first few weeks of the disease. The tonsil affords the most hopeless site for a malignancy is so far as a complete cure is concerned. The tonsils being located in the pharynx, the avenue of the foods which is necessary

for the sustenance of life and the inaccessibility so far as surgery is concerned makes radical surgery very dangerous. The tonsil is surrounded by a very rich blood and lymph supply and this is perhaps the reason that some of the cases are not seen until there has already been a metastasis in some other part. Some of these cases are almost hopeless when first seen.

If you will pardon me, I think it might be well to refresh our memory of the anatomy of this structure. The tonsils are glandular organs, averaging about 2.5 cm. in length and 1 cm. in width and are located between the anterior and posterior pillows. Each tonsil contains about 12 to 14 recesses or crypts. From these crypts follicles extend outward. The walls of the crypts contain adenoid tissues as well as mucous glands. This lymphoid tissue is held together by connective tissue, which is continuous with its capsule and the sub-mucous tissue of the pharynx. Surrounding each follicle is a plexus of lymphatics which pass to the cervical glands of the neck. The veins terminate in the tonsillar plexus on the outer border of the tonsil.

As to the function, so far as I know, there is nothing definite. They do pick up bacteria from the food we eat, they may be blood-forming organs in the infant, but I am not here to assert whether they are an asset or a liability.

Acute and chronic infection in the tonsils is an everyday occurrence, but a malignant condition, as I have said before, is rarely seen. Perhaps in large hospital centers they are seen rather frequently and especially so in hospitals solely for the treatment of cancer. Tumors of this area occur more frequently in men than women, in my own experience, and in the experience of others who have written on the subject. Just why this is, I have no solution unless tobacco might play some part by causing a chronic source of irritation.

CAUSE

Cancer here, as in other locations, still baffles the medical profession. No direct cause of course is known. Chronic infection in the tonsil may play some part though it cannot be classed as a cause. Syphilis is thought by some to be an etiological factor. Syphilis and malignancy are sometimes seen as a coincidence. (After treating a patient, who has a chronic tonsillitis and a positive Wasserman, with intensive luetic treatment for three or four weeks you have not gotten marked improvement, don't neglect taking a specimen for laboratory study.)

SYMPTOMS

In the earlier stages there are few symptoms. In fact, nothing that would lead the patient to believe there was any serious trouble present. Pain, in my experience, is not the first symptom. This comes later. The first symptom most of my patients complain of, is a slight discomfort which has lasted from a few weeks to several months. In the early stages

there is no pain in swallowing. It would indeed be a great blessing if there were severe pain in the beginning of the disease, as this would send the patient to seek medical advice earlier. Later, in the progress of the tumor, pain develops which may be local or radiate to the ear, neck and side of the head. Their general physical condition has not as yet been impaired. They have not lost weight, their appetites are still good, and, other than the constant annoyance by some trouble in the throat, they feel well. (If the tumor is a benign one, as a rule they complain of no pain or soreness. The only complaint is: That they have noticed the mass on the tonsil or that there is an obstruction to swallowing.) In my experience this has been a very helpful point in the differential diagnosis between a benign and malignant condition. I removed a tonsil about two weeks ago, which had attached to it a tumor, the size of an acorn, which I thought was a papilloma (and proved by laboratory test *to* be) in which the boy had no symptom whatsoever except that he could see it in his throat as it began to produce obstruction in swallowing. In many of the patients suffering from malignancy one of the first symptoms is the enlargement of the anterior cervical glands. A great many of the patients fail to consult a physician until the glands are very large. This adenitis is sometimes the first symptom we have. As time goes on, all of the symptoms become more pronounced, pain increases, the act of swallowing becomes more painful, the desire for food is gone, metastasis has occurred in some other organ, and the typical cachectic syndrome has become pronounced. One of the first things I have noticed is: That there is a feeling of anxiety upon the part of the patient. He is conscious of the fact that a tumor exists, and he seems to dread positive diagnosis. There seems to have been a recent increase in the number of epitheliomas of the tonsils. I do not know whether this is a true increase or whether there are more cases reported now than formerly. Certainly the cases reported are rapidly on an increase. It is estimated that there are one hundred cases of cancer of some other part of the body to one of the tonsils. This gives the comparative frequency of the occurrence in the tonsil. Berven reported in 1931 from the Radiumhemmet in Stockholm ninety-seven cases. Quick, 1930, reported three hundred eighteen cases from the General Memorial Hospital, New York City. Schriner, 1929, reported sixty cases from the State Institute for Malignant Diseases of Buffalo. Coutard, 1930, reported forty-seven cases from the Curie Institute in Paris. Curtis F. Burnam, of the Howard A. Kelly Hospital of Baltimore, has reported one hundred sixty-five cases since 1911.

Returning to the benign tumors, we find the papillomas most common. Others less frequently found are the angiomas, lymphomas, adenomas, fibromas, lipomas and terratomas. Morbid processes occur in the tonsil, chiefly in the early period of life, while in the later years there is a general retrogressive change of the tissues, and the tonsils tend to become smaller

masses of inert tissues. The first tumor of the tonsil was reported in 1857 by Robert and was a benign one. It was not until 1897 that the first complete monograph was published by Ardenne, a Frenchman. At the beginning of the present century there had been only thirteen cases of fibroma reported. New and Childrey, of the Mayo clinic, reported sixty-three cases from 1917 to 1930, and thirty-five of these were papillomas. These tumors may occur at any age. The youngest of these, reported by Dr. H. J. O'Hara, of Los Angeles, was seven years. The chief diagnostic point noticed when dealing with the benign tumor is the complete absence of symptoms. There is no pain or soreness. There is no glandular enlargement, and there is no pain on swallowing.

TREATMENT

The treatment of a benign condition consists in the complete removal of the tumor.

Again returning to the question of malignant neoplasms of the tonsil, the most frequent one found under forty years of age is the lympho-sarcoma. It is said by McKenzie of England that the tonsil shares with the testicle the most favorite site for lympho-sarcoma. This is the type of neoplasm that has a rapid tendency to the involvement of the underlying lymph structure. There are other types of sarcoma involving the tonsil, but of rare occurrence. Sarcoma most often occurs as a smooth, ovoid, rapidly-growing tumor with a waxen appearance. The pushed-out appearance, so to speak, resembles very much a peritonsillar abscess. (A boy was referred to me, by his family physician, for the purpose of opening a peritonsillar abscess. I will report this case later.)

The most frequent tumor of the tonsil seen above the age of forty is carcinoma. This tumor, as all the other tumors, is very insidious on onset. At the beginning there is no symptom of importance noticed, other than a little discomfort in the side of the throat. Of the various epitheliomas occurring in the tonsil, I feel the most important ones are the lympho-sarcoma and the carcinoma. I should, at this time, like to report a case of lympho-sarcoma and a very rare case of adeno-carcinoma.

Case 1—Adeno-carcinoma. Mrs. J. S. G., Rosman, N. C.

This patient was referred to me on September 15, 1934, by her family physician.

Female, age 59.

Past history: Negative. Has never had any illness of serious nature. Has had the usual diseases incident to childhood.

Family history: Three brothers living and well. Two sisters living and well. One sister died a few years ago at the age of seventy-two from paralysis of the throat (whatever that was). Father died at the age of seventy-eight with heart trouble. Mother died at the age of seventy-two from pneumonia. One aunt died about the age of seventy-five with a tumor of the uterus.

Present illness: Patient is a well-nourished individual and for the exception of being inclined to be a little nervous, you would think she was a well individual. Blood pressure 170 S., 100 D. Urine negative except slight trace of albumen. About two months ago she noticed that there was some trouble in the right side of her throat. The condition has gradually grown worse until at the present time she is having some difficulty in swallowing. At the beginning there was no pain. There was no symptom other than slight discomfort in the side of the throat. At the present time she is having some slight pain in the throat, radiating to the right ear and side of head. There is not actual pain upon swallowing, but there is at each time the sensation of something stopping the food in the throat. No cervical glands could be found upon palpation. With the tongue well depressed a tumor mass could be seen growing out from the lower pole of the tonsil. It also seemed that a part of the mass was attached to the base of the tongue. The tumor was about the size of an acorn. It was warty in appearance and had a rather broad attachment at its base. As I needed a specimen for biopsy, on September 17, 1934, I removed the tonsil and the part of the tumor attached to it. No attempt was made in removing the part attached to the tongue. She made and rapid and complete recovery from the removal of the tonsil and the piece of tumor. The specimen was sent to Duke University laboratory for study. The laboratory reported an adeno-carcinoma. The pathologist being interested in this particular tumor coming from the tonsil as it did, wrote me for further information, which I furnished. I should like at this point to quote Dr. Roger D. Baker's reply: "I was glad to receive the additional information in Mrs. Greenwood's case, and I will record same in our files. With regard to the tumor, I have looked in Ewing's book on neoplastic tumors, and in Dean Lewis' System (article by Bloodgood) can find no description of adeno-carcinomas of this region. Ewing gives reference to Brun's, of Heidelberg, Volume Six, page 561, about 1890, in which one case was encountered at the clinic in Heidelberg. Hence, a very rare tumor is being dealt with and no clinical experience is available with regard to treatment of this particular type. However, since it is a malignant tumor, its treatment would probably be essentially the same as for the more common squamous cell carcinoma of the tongue. From the microscopic appearance, I would expect that the tumor would metastasize. However, if I am mistaken, I would like to know so in the course of several months or years. In any event, I would be greatly interested in knowing what the tumor does. Signed, Roger D. Baker, Assistant Professor of Pathology."

This patient was sent to the Rutherford Hospital for treatment on October 28, 1934. On the above date she was given radon implantations. Six weeks later I saw her and the size had been reduced about fifty per cent. On December 15, 1934, she had a second treatment. On January 20, 1935, I saw her again, and there was not the slightest trace of this tumor remaining. I saw her again a few days ago and one would never know that

she had had a tumor. The surface previously covered by the tumor was perfectly smooth. At this time she has no sign of recurrence. We naturally expect this tumor to recur, but at the same time, hope it will not. I have searched all the textbooks and literature available and have been unable to find a case of adeno-carcinoma reported other than the one previously mentioned. We will continue to watch this patient about every two months over a long period for any metastasis or recurrence. At the present time she has no sign of any metastasis, nor has she any glandular enlargements in the neck.

I have had six cases of squamous cell carcinoma, but owing to lack of time, I thought it might be of more interest to report this adeno-carcinoma rather than one of the common squamous cell carcinomas.

Case 2—Lympho-sarcoma. G. D., 17-year-old boy.

Referred to me on April 23, 1933, by his family physician.

Family history: Negative. I could get no history of any previous case of cancer in the family.

Past history: Has had the diseases of childhood, otherwise, nothing of importance.

Present illness: This patient was referred to me on the above date for the treatment of an acute sinus infection of one week's duration. The left maxillary and the left frontal sinus were dark under illumination. He had an acute rhinitis. The left maxillary antrum was irrigated and the frontal sinus treated. This condition cleared within about ten days. No mention was made by the patient of any soreness or pain in the throat. The boy had been well prior to catching cold about ten days ago. Upon making a throat examination at his first visit to my office, I noticed his left tonsil was swollen and inflamed. The peritonsillar tissue was injected. There were only one or two scarcely palpable cervical lymph glands. I asked the patient if his throat were sore, and he answered negatively. His tonsil was painted with silver nitrate and he was requested to report to his physician within a few days after I had given him his last sinus treatment. A blood Wasserman was made at his second visit to my office while under sinus treatment. The test was negative. Two weeks later the patient was sent back to me for treatment of what the family doctor thought was a peritonsillar abscess. At this time the tonsil was very much larger and the paritonsillar tissue also was very much swollen, and it had a striking appearance of a peritonsillar abscess. Upon palpation of the mass, we found instead of a soft tumor, that we would expect in abscess condition, a hard, smooth mass without the usual signs of pus formation. At the end of six days, without any improvement and the mass growing larger, we resected an anterior cervical lymph gland for biopsy. Swallowing at this time had become very painful. However, he had no pain or soreness in the early stage and did not have any at all until the tumor mass was twice the size of the normal tonsil. The specimen was sent to the laboratory for

study. The laboratory report at this time was negative as to malignancy. Not being satisfied with this report, a section of the tonsil tissue itself was resected and sent to the laboratory for further study, and the report this time was lympho-sarcoma.

On May 30, 1933, he was sent to the Rutherford Hospital for radium and X-ray treatment. He was given his first treatment on the above date. At this time he was having much difficulty in swallowing on account of the pain and the size of the tumor. In four or five days the tumor had increased about fifty per cent in size. On June 9, 1933, he had a second treatment. Within a very few days the glands of the neck and tonsil were almost back to normal size and the patient could swallow without much difficulty. However, at this time the patient had lost markedly in weight, and his pallor had become rather pronounced. We could not find as yet any evidence of metastasis. About four weeks later a tumor mass had developed on posterior pillow of the tonsil the size of a large marble. The patient gradually lost weight and energy, and on July 15, 1933, he died. Before death he had symptoms of metastasis in the mediastinal glands and lungs.

To me this is a pathetic picture. On April 1, 1933, this young man was well and enjoying good health, and on July 15, 1933, (less than four months), was dead from a malignant tumor. This is one case demonstrating the rapidity with which a sarcoma can prove fatal. I do not know how long this boy had perhaps a slight trouble in the tonsil before I saw him. It must have had its beginning at least a month or more before I saw him the first time. At this time he had not noticed any trouble in his throat, had not had any pain or soreness, and was unaware that there was anything wrong. There was no attempt made with surgery, as the case looked hopeless from the time the diagnosis was established. I feel and believe that if a diagnosis had been made a month or two earlier, treatment would have been more successful, or at least would have prolonged his life.

The point I should like to make is: Do not treat lightly a tonsil that is slightly enlarged and has an inflamed appearance, even without symptoms, but make every test necessary to establish a diagnosis immediately. There are only one or two conditions that I have seen that resemble the sarcoma of the tonsils in its infancy, and that is syphilis, and in rare cases Hodkins disease. When a case of this sort is found, take a blood Wasserman first, and if this be negative, remove a section from the tonsil tissue and have a biopsy made. I feel that a great many of these tumors have been overlooked in their infancy by the family physician and the laryngologist. What applies to cancer in general holds good here. If we expect to accomplish a cure by surgery or radium, or by both, a diagnosis *must* be made in the very early stage.

TREATMENT

I have nothing new to advance in the form of treatment. The mortality rate in cancer of the tonsils, or anywhere in the pharynx, is much greater than in any other part of the body. As I have said before, the inaccessibility of the area to very radical surgery is a stumbling block. The fact that so many important structures are in proximity forces the surgeon to deal gently with the knife or cautery, as the case may be. There are, perhaps, a few cases that might be cured by surgery alone, but I think the percentage is small. I think the best treatment is by surgery where possible, followed by radium and X-ray therapy. Some cases when first seen are too far advanced to attempt removal. Many of the cases will get well by radium and X-ray alone. In all my cases where I removed the tonsil and the tumor I had it followed by radium, X-ray, or both. The tonsils are surrounded by tissues which are very ray sensitive. Consequently, another obstacle arises to obstruct treatment. I will not attempt to measure the dosage of rays or radium as I know nothing much about it, but leave all this treatment to the roentgenologist.

In my experience only about ten per cent of the cases get well. Henry Coutard, of the Curie Institute, of Paris, treated with X-ray and radium forty-six cases over a period of five years, and at the end of the five-year period only eight of the forty-six were living, showing a mortality rate of about ninety-two per cent. In my series of ten patients in the past four years there is only one living, showing a mortality rate of ninety per cent.

There is one other thing I should like to say in regard to the diagnosis and treatment of squamous cell carcinoma of the tonsil, and that is this: The patient is usually above the age of forty, with most of the cases occurring above fifty, and in the beginning of the disease there is nothing of importance in regard to symptoms that the patient might complain of that would make one search carefully for trouble. If the patient is above fifty, has a slight discomfort in one side of the throat with the tonsil appearing slightly larger than the other tonsil, with perhaps a cervical gland in the neck enlarged and slightly tender upon pressure, always suspect a malignancy.

After having made a diagnosis, lose no time in removing the tonsil and the tumor mass and follow this by radium and X-ray.

In closing I wish to say that if the mortality rate from tumors of the tonsil is ever lowered, an earlier diagnosis *must* be made.

I would like to take this opportunity to thank Dr. R. H. Crawford and the Rutherford Hospital for their fine work in the use of radium and X-ray in the treatment of my patients. I also want to thank the librarian of Duke Medical School Library for the loan of some articles on subject of this paper.

SECTION ON PRACTICE OF MEDICINE

TUESDAY, MAY 7, 2 P. M.

The Section on the Practice of Medicine, Dr. Verne S. Caviness, Raleigh, Chairman, was called to order in the Ball Room, Carolina Hotel, Tuesday, May 7, 2 P. M.

PULMONARY ASBESTOSIS

By T. PRESTON WHITE, M.D., Charlotte, N. C.

Pulmonary asbestosis is an occupational disease caused by the continued inhalation of asbestos dust with a resulting characteristic fibrosis. The rapidity with which the disease progresses depends upon the length of time of exposure and the concentration of the dust. Asbestos is a silicate of magnesia sometimes containing very small amounts of iron and nickel. It is quarried both in the United States and in Canada. The dust results from the breaking up of the asbestos and chiefly occurs in mills in which asbestos products are manufactured. The dust is made up of fine asbestos fibers which are inhaled and which set up a pneumonoconiosis of characteristic variety.

During the last few years, I have seen an increasing number of men and women who have worked in asbestos mills. All of these have had the same complaints in varying degrees. Because of the many occupational hazards and because all employees should be protected with safety devices to protect their health, I feel that it should be of interest to bring this disease to the attention of the State Medical Society.

The symptoms of pulmonary asbestosis given in order of importance are as follows:

1. Dyspnea which often is out of all proportion to the physical findings in the individual. Even on the slightest exertion the patient may become very short of breath.

2. Cough which is usually non-productive, although at times there is a slight tenacious sputum which may be blood streaked.

3. Anorexia with resulting loss of weight and progressive weakness.

4. Chest pains often substernal, although they may occur anywhere in the chest, resulting from a localized pleurisy.

The physical findings are as follows: the patient has a sallow appearance and may even be slightly cyanotic. There is usually some degree of emaciation. In advanced cases, there is clubbing of the fingers; asbestos corns are seen on the hands and occasionally on the lower extremities. The lungs show signs of pulmonary fibrosis; expansion of the chest is limited

and may not be more than one inch; there is retraction of the lower intercostal spaces; fine dry rales are heard best at the bases and in the axillae; breath sounds are diminished at the bases and often increased over the upper lobes, this latter being due to the compensatory emphysema. A dry friction rub is often heard in the axillae. In the advanced cases there is usually evidence of enlargement of the heart, particularly the right side, with increased pulse rate and other evidences of congestive heart failure due to myocardial weakness.

Asbestosis bodies may be found in the sputum and in the lungs. Ellman[1] describes these bodies as having an highly characteristic golden-yellow color. They vary in size and shape, but, characteristically, they have bulbous enlargements at the extremities, with a regularly or irregularly segmented body, resembling dumb-bells; when fractured they are club-shaped. The asbestos fiber forms the core. The asbestos body must be due to some tissue reaction in the body probably a collidal reaction in which iron plays a part. The finding of these bodies is pathognomonic.

Radiological findings are as a rule distinctive. This will be brought out by Dr. Shull when he shows lantern slides of the lungs of a number of patients with asbestosis. The findings are as follows: (1) an emphysematous type of chest; (2) flaring of the lower ribs; (3) diffused fine to coarse fibrosis reaching the periphery, most of the fibrosis is in the lower two-thirds of the lungs, although some of the fibrosis is seen in the upper third. This differs from silicosis which gives a more distinctive nodular appearance. (4) Hazy ground-glass appearance to the lung fields; (5) an increased density of all pleural markings; (6) a shaggy appearance to the cardiac outline; (7) tendency toward right-sided cardiac enlargement; (8) usually a flattening of the diaphragm. Death results from either tuberculosis, an acute respiratory infection, or from congestive heart failure.

Macroscopically the visceral pleura is thickened; the lungs are firm and contracted and usually are hard and leather-like.

Microscopically according to Ellman[1], the interstitial tissue of the lungs is everywhere increased with other areas showing evidence of compensatory emphysema. Asbestos bodies are found in profusion; carbon pigment is present. Advanced areas of fibrosis can be found associated with bronchiectatic change. Foreign body giant cells distinct from tuberculosis giant cells may be present in the connective tissue. Gloyne[2], who has recorded these cells and termed them "asbestosis giant cells," suggests that they present an attempt to destroy the asbestos fibers by phagocytosis.

As Ellman states the diagnosis depends upon: (1) exposure to asbestos dust; (2) clinical evidence of pulmonary fibrosis; (3) radiological evidence of fine, diffuse, pulmonary fibrosis; (4) asbestos bodies in the lung tissue.

Treatment is purely palliative. Prevention of this disease is of the greatest importance. It is known that according to Wood[3] obsolescent tuberculosis may remain quiescent in spite of exposure to asbestos dust. He mentions two cases of nine and eight years exposure and states it is yet impossible to say which may be the antecedent disease. We have had several patients with tuberculosis complicating the disease and certainly one or two with an arrested tuberculosis.

A typical history may be of interest. P. J. V., white, male, age 45, first seen in 1925. At this time he was complaining of shortness of breath, non-productive cough, slight loss of weight, although appetite was still good. The patient thought he might be developing tuberculosis. He had worked in an asbestos mill for a period of nine years. His past medical history was negative. The physical examination was negative except the expansion of the chest was poor, many fine dry crackles were heard throughout both lungs, particularly at the bases and in the axillae. There was dullness to percussion at both bases. The sputum examinations were negative for tubercle bacilli. It was my impression that all of the patient's trouble resulted from the inhalation of the dust, which was in a moderate degree of concentration, in the mill where he worked. From 1925 to 1934 he was seen several times a year with all of the above symptoms increasing in severity, and during the winter he had frequent attacks of bronchitis which was difficult to throw off. About 1930 his heart showed evidence of enlargement. The heart rate at rest varied between 90 and 110. During 1934, and until the time of death, which was in January, 1935, he became very breathless, edema of the feet and ankles became evident and the patient died as a result of congestive heart failure, age 55. Radiological findings, December, 1934, were reported as follows: Chest: Stereoscopic films show a barrel-shaped type chest, with the trachea in mid line. The lung fields are negative for tuberculosis. The examination shows a marked, widespread fibrosis throughout both chests which reaches the periphery. The heart outline is entirely obscured by dense fibrosis and the cardiophrenic angles are obliterated. The domes of the diaphragms can not be delineated and the left dome of the diaphragm is on a level with the right dome. There is very little air space observed in the lower lobes and the air spaces in both upper lobes are markedly diminished. The upper six intercostal spaces on both sides are very much narrowed. The exact heart measurements cannot be determined because of the shagginess of the heart outline but the heart is definitely enlarged.

We were permitted to make a partial post-morten examination. The lungs and heart were removed. These were sent to Dr. James Bullitt[4], who has been kind enough to make a pathological study, and he will report his findings to us.

This gives a picture of what is to be expected in all individuals if pulmonary asbestosis is allowed to develop.

Some of the preventive measures that should be instituted are:

1. An efficient localized exhaust ventilation at dust-producing points.
2. Enclosure of mechanical methods for hand conveyance.
3. Enclosure of the dust-producing machines.
4. Substitution of the wet for the dry method.
5. Breathing apparatus for persons who are employed in the very dusty operations.

These regulations were obtained from a report after an intensive study by the Asbestos Industry Regulation Board of Great Britain.

All employees should have a careful examination before being employed and there should be absolutely no signs of any disease of the lungs or heart. At least yearly examinations of those employed should be instituted. This examination should consist of both a clinical and a radiological check-up, and, if there is any evidence of an early pulmonary asbestosis, the individual should then be advised to seek some other form of occupation. The overseers and management personnel should be instructed as to the physical as well as to the mechanical hazards involved in their particular industry. All people employed in these mills should be taught the early signs of the disease so that when symptoms first develop they will be recognized and medical advice immediately sought.

SUMMARY

The diagnosis of this disease in the early stage may only be made by taking into account the history of the patient, the history of occupation, the physical and radiological findings. Pulmonary asbestosis must be classified as a most serious form of pneumonoconiosis; that only by prevention may this disease be controlled. For once established to any great degree, treatment is only symptomatic and the individual will soon be unfit for any form of labor and death will ensue prematurely.

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THE DIAGNOSIS AND TREATMENT OF NERVOUS OR FUNCTIONAL VOMITING

By W. R. Johnson, M.D.

Vomiting is a frequently encountered symptom and may be produced by a great diversity of organic diseases, or it may occur as a result of a purely nervous or functional disorder. The proper treatment of this symptom depends entirely upon its underlying cause, for instance, appendec-

tomy for vomiting due to acute appendicitis, but psychotherapy for vomiting due to a neurosis. In this communication, the clinical diagnostic features and the treatment of true functional vomiting will be considered.

First, let us define this condition. True nervous or functional vomiting is that type of vomiting which is due to a disturbance in the psychic or emotional sphere of the patient and occurs in the absence of demonstrable organic disease in the gastro-intestinal or central nervous systems or in any other system or portion of the body.

ETIOLOGY

Any situation or set of circumstances that produces acute or chronic psychic trauma or, as it is more commonly phrased, acute or chronic exhaustion of the nervous system, may, in patients with an inherently inadequate or unstable nervous system, produce functional vomiting. Obviously, the precipitating causes may be extremely varied. Some of the most frequently encountered causes are as follows: marital infidelity, marital incompatibility, worry over inadequate finances, worry over unhappy love affairs or because of the lack of love affairs, dissatisfaction with school life, anxiety because of the illness of loved ones, fear of harboring serious disease, and so on. The factor which is common to all of these situations is mental unrest. While the normally constituted person is able to bear up under a tremendous load of worry, unhappiness, and grief, the psychically inadequate or nervously unstable person will frequently break under such strain. One form of such a "break" is functional vomiting. From the psychiatric standpoint, functional vomiting must be considered as an escape mechanism—a flight from reality—a means of self-justification for the patient's inability to cope with the problem which confronts him.

SYMPTOMS AND CLINICAL CHARACTERISTICS

Now, what are some of the features which distinguish this type of vomiting? First, the vast majority of patients who have this trouble are women, and usually they are young women, although occasionally it will be encountered in the fourth or fifth decades. I have seen a few examples of this disorder in men and several of these instances stand out definitely in my memory. One occurred in a Divinity student and another in a young priest who had recently been assigned to his first parish. The Divinity student had developed doubts as to his ability to accept the fundamentalist doctrine of his church, and thus the very foundation of his future life in his chosen calling was placed in jeopardy. The priest had discovered that he was unable to fulfill the many obligations which devolved upon him in the conduct of parish duties. Both of these men were markedly introverted and had been shielded from the world by adoring parents. Faced, for the first time in their lives, with somewhat difficult decisions, their personalities proved unequal to the test and they resorted to a flight from reality in the form of functional vomiting.

A second characteristic of this type of vomiting is that usually it is quite effortless. These patients experience none of the terrific straining and retching which accompanies the vomiting of the average person. Many of them will tell you that since childhood they have been able to empty their stomachs "at the drop of the hat."

Another diagnostic feature is that the appetite ordinarily is unimpaired. These patients frequently return to the table immediately after having regurgitated a meal and eat a second meal with pleasure and satisfaction. That they are able to do this depends largely upon a fourth diagnostic feature, which is absence of nausea, together with its associated symptoms of weakness, trembling, and cold perspiration. While it is true that some of these patients complain of varying degrees of nausea, the majority of them vomit without having experienced this unpleasant symptom. Often, indeed, they are unaware that anything has happened until they suddenly find the mouth full of regurgitated gastric content.

Another typical characteristic of this condition is that the vomiting occurs soon after eating, within five to thirty minutes as a general rule, although it may be delayed as long as several hours.

Pain is rarely present, whether before, during, or after the vomiting act. When pain is complained of, closer questioning usually reveals the fact that the "pain" is really but a sensation of fullness, weakness, or vague discomfort in the upper abdomen.

Functional vomiting may continue for weeks or even months without seriously affecting the patient's health. Loss of weight may occur, it is true, but the patient usually presents an aspect of well being strangely in contrast with the apparent seriousness of the complaint. This is due to the fact that the stomach rarely is emptied completely and enough food is retained to meet the nutritional demands of the body.

Still another distinguishing characteristic of this type of vomiting (and a very important one) is the fact that these patients rarely if ever embarrass themselves by vomiting in public. They are always able to reach a rest room or a convenient receptable before the desire to regurgitate becomes so insistent that it must be obeyed. A good question to ask these patients is this: Suppose you were dining in a hotel when the desire to vomit came on, would you be forced to empty your stomach in public or do you think that you could reach a rest room before the vomiting occurred? Invariably they will answer, "Well, it would be mighty difficult to do so, but I believe I could reach the rest room in time."

There are other symptoms less frequently seen, but no less diagnostic when encountered, and one of these is the air of theatricality which surrounds some of these sufferers. They are intensely dramatic in their recital of their troubles; they speak in hyperbole and in superlatives, and they show plainly that they are trying to impress the physician with the importance and seriousness of their symptoms. They are very apt to observe

that they are able to carry on only because of their excessive courage and determination and that if their husbands or other unsympathetic relatives were similarly afflicted, they would have given up and died long ago. Another of the less common symptoms is the peculiar ability to eat bizarre types of food with impunity while utterly unable to retain simple, wholesome food. Sometimes only certain kinds of food will be vomited—other foods eaten at the same time will be retained with ease. I remember one man who boasted that he could eat a seven-course dinner and at the end of it bring up any one of the seven courses at will and in almost pure form. I doubt that his vomiting mechanism was as amazingly specific as he claimed it to be but he did demonstrate an uncanny ability to regurgitate certain foods to the exclusion of others.

FAMILY HISTORY AND PAST HISTORY

As far as family history is concerned, you will not infrequently find evidence of unstable nervous systems in the parents, brothers and sisters, or uncles and aunts. Insanity, hysteria, neurasthenia, nervous breakdowns, and chronic invalidism without apparent organic cause may be discovered in the other members of the family if a careful search is made. The past history of the patient may reveal evidence of a neurotic make-up or of an inadequate psychological adjustment to the problems of school life, puberty, marriage, and general social contact.

EXAMINATION

Since the confidence engendered by a thorough examination forms the very keystone of all therapeutic efforts, it follows that the examination should be as complete and convincing as circumstances will permit. The least that one can do is to examine the patient, completely disrobed, from head to foot, not neglecting the optic fundi, the pelvis, and the rectum. Laboratory tests should include studies of the blood, urine and gastric contents, roentgenological observations of the gastro-intestinal tract, and, wherever indicated, a determination of the basal metabolic rate. Usually, in these patients with functional vomiting, nothing is found other than evidence of loss of weight and the stigmata of an unstable nervous system. Occasionally a low metabolic rate is encountered. Despite a positive conviction that the examination will be negative, it should never be slighted in any detail.

DIFFERENTIAL DAIGNOSIS

This condition must be differentiated from those organic gastro-intestinal tract diseases such as stricture or diverticulum of the oesophagus, cardiospasm, pyloric obstruction, peptic ulcer, gastric cancer, obstruction of the bowel, appendicitis, cholecystitis, and so forth. Many diseases located outside of the gastro-intestinal tract provoke vomiting that closely simulates true functional vomiting. Some of these conditions are: early pregnancy, hyperthyroidism with crises, Tabes Dorsalis with gastric

crises, Addison's disease, uremia, brain tumor, brain abscess, meningitis, encephalitis, and so on. Differentiation of functional vomiting from these conditions should occasion little difficulty if the clinical characteristics of functional vomiting are kept in mind, and if a complete examination including roentgenological studies reveals no evidence of organic disease. In this connection it must be remembered that functional vomiting and wholly unrelated organic disease may occasionally be found to exist in the same patient.

TREATMENT

The treatment of functional vomiting resolves itself largely into a question of psychotherapy. The success of such treatment depends to a large measure upon the degree of confidence the patient has in her physician and in his ability to make a correct diagnosis and institute proper treatment. Of course, the personality of the physician plays a large role in the establishment of such confidence but more important than this is painstaking care and completeness in the conduct of the examination. When the doctor tells his patient that he can find no evidence of organic disease and that in his opinion the symptoms are due to a disturbance in the function of the nerve mechanism controlling the vomiting center, he must have adequate grounds for such a statement or the patient may fail to believe him. Such lack of belief and confidence predicates the ultimate failure of the treatment.

Fortunately, the majority of patients with functional vomiting have a rather mild degree of trouble, and treatment of these patients is relatively easy and effective. A change of scenery and environment is invariably accompanied by complete cessation of symptoms, but if nothing further is done they are very apt to recur as soon as the patient returns home. Sometimes all that is necessary is to explain the situation to the patient, pointing out the obvious connection between the precipitating cause and the development of the symptoms. If the patient is intelligent and the basic cause not too difficult of solution, no further treatment may be needed. For the average mild case, however, with regurgitation of but a portion of one or two meals a day, effective treatment must be carried out in somewhat the following fashion. The patient is solemnly assured that her regurgitation is not due to organic disease inasmuch as a careful complete examination has failed to reveal evidence of such disease. The underlying cause, if it has been determined, must be pointed out and its importance duly stressed. The patient is assured that if she will make a sincere effort to retain her food or to swallow it when it does come up, if she will refrain from liquids except in the between-meal period, if she will lie down for a half hour after each meal and obtain more rest at night, if she will quit worrying about her condition, and if, in addition, she will take a mild sedative such as a bromide or one of the barbiturates, she will be able to control her symptoms without further difficulty.

Should the above regimen fail to be effective, or should the patient be in an advanced stage of the disease when first seen, more vigorous treatment must be applied. It is difficult, if not impossible, to treat successfully the more resistant cases unless the patient is placed in a hospital. The constant presence of anxious relatives and friends constitutes a serious barrier to successful treatment, and for this reason all visitors should be rigidly excluded. The patient should be kept strictly in bed and should see no one but her attending physician and the nurses. Reassurance as to the benign nature of the disease and the favorable ultimate outlook is given. A preliminary period of starvation is insisted upon, and during this period of two or three days proctoclysis or a continual intravenous drip of 5% glucose in physiological saline or hypodermoclysis of normal saline should be maintained to combat dehydration and acidosis. Adequate doses of bromides, chloral, or the barbiturates should be given three or four times daily by rectum to reduce the irritability of the vomiting center and to allay undue nervousness and apprehension. After a day or two of such treatment the patient usually asks for food, but it is well to continue the starvation period for another full day, at which time her appetite may be ravenous. At first only small bits of dry food such as well toasted bread or Zwieback should be given, and the patient is told that should vomiting occur, the starvation treatment must be started again. If she retains the dry food without diffculty, small sips of water may be allowed between meals. If all goes well, the diet is rapidly increased in quantity and variety, but liquids are permitted only between meals. From this point on, a rapid return to a normal scheme of living may be permitted.

In the most stubborn and advanced cases, regurgitation of the initial small dry feedings may occur. In such an instance, feeding by means of the duodenal tube must be resorted to, and the threat of such feedings should constantly be held before the patient's eyes during the course of treatment. The tube is introduced through the nares, and when the tip is in place the upper end should be strapped to the cheek with strips of adhesive. Feedings of high caloric, high vitamin liquid food may be given every two hours, the quantity depending largely upon the patient's subjective symptoms. If more than three or four ounces of material are injected into the duodenum at one time, unpleasant fullness or even pain may result. Usually it is not long before the patient pleads to have the tube removed, but before this wish is granted she is given to understand that, in the event of further vomiting, the tube must be re-introduced. If the appetite flags, insulin or liver extract cocktails may be beneficial, and if the metabolic rate is low, an effort should be made to restore it to normal. Such treatment together with repeated encouragement and the threat of punishment if the vomiting recurs usually works wonders with these patients. They become rested and relaxed, gain in weight and strength, and soon are able to eat normally. The improvement in general health plus

the already demonstrated fact that the vomiting can be controlled provides a powerful impetus for the patient to remain well.

The physician who treats this condition successfully must be possessed of sympathy, patience, tact, and forbearance. He must realize that the patient is not to blame for her predicament and that she is not vomiting because she consciously wishes to do so. To tell these patients gruffly that their trouble is "just due to nerves" and that they can quit vomiting if they want to is to stir up rebellion and disbelief in their minds and to insure the ultimate failure of the treatment. Most of these patients have made what they thought was a sincere effort to help themselves and have been unable to do so. They resent any inference that their troubles are brought on voluntarily or by lack of proper control of their nerves. It is well to avoid the use of the term "nervous" altogether and to substitute in its stead "functional" or "improper adjustment." It is infinitely more pleasant for a patient to be told that her troubles are due to a psychic disturbance or to maladjustment than to be told that she is merely the victim of "nerves" and of her own disinclination to get well.

PROGNOSIS

In the vast majority of patients the immediate outlook is favorable, for the vomiting can be controlled with but relatively little difficulty. The effect of isolation in a hospital, strict bed rest, forced feedings, sedatives, sympathy, and encouragement is oftentimes striking, and the patient leaves the hospital with a different frame of mind, increased weight and strength, and a sincere desire to remain well. The ultimate prognosis depends upon the make-up of the patient and the degree to which the causative psychic disorder can be eliminated. Patients with a marked psychoneurotic personality may have a recurrence of symptoms despite all that is done, but the vast majority will respond favorably to the regimen just outlined.

CASE REPORTS

I should like to present a case of the most simple type of functional vomiting and another of a more advanced type. The first patient was a mountain girl of fourteen years. She was the third of six children, and lived back in the mountains several miles from the nearest settlement. She was passionately fond of her studies and was anxious to enter high school the following year. During the year previous to the time I saw her, her mother had become ill and it devolved upon this girl to take over a great many of the household duties. It was necessary for her to arise very early in the morning to prepare breakfast for the rest of the family, and immediately upon her return from school in the afternoon she had to wash dishes, clean up the house in general, and prepare for the evening meal. Whereas formerly she had been the star pupil of her class and had been very proud of her high scholastic standing, she now began to slip back and as her grades became lower she became more and more unhappy.

Gradually she began to regurgitate food after her meals, at first only occasionally and but a mouthful at a time. The regurgitation was effortless, occurred soon after eating, and was not accompanied by nausea or pain. It began to arouse the interest and concern of her parents and she was relieved of some of her duties about the house, but gradually the symptoms became more marked, and soon she was regurgitating food after every meal. Her general health did not appear to suffer, however, and she was able to continue school and do some of the house-work. After several months her parents decided that medical attention was imperative. General examination was entirely negative. The patient was in an excellent state of nutrition, and as far as she could judge by her clothing she had lost but little if any weight. No deviations from normal were found in any of the tests. Inasmuch as the girl lived some sixty miles from town and was unable to remain for treatment, the situation was carefully explained to her and to her father. She was assured that the basic cause of her trouble was her dissatisfaction with the home environment and the inroads which her household duties made upon her time. She was promised that she would be relieved of further duties at home and allowed to spend more time upon her school work, and, if possible, would be allowed to enter high school the following year. A mild digestive and sedative mixture was prescribed, and the girl was urged to submit weekly reports as to her condition. Within two weeks she stopped vomiting entirely, and subsequent letters reported a complete and apparently permanent cure of her disorder.

Comment: This is one of the simplest types of nervous vomiting that we encounter. The underlying cause was not difficult to uncover, and as soon as her intense dissatisfaction with her home environment and future outlook was alleviated, she stopped vomiting.

Case 2: The next case is an example of a more advanced stage of the disease and also incidentally portrays what not infrequently happens to these patients when they fall into the hands of a man who is a more enthusiastic operator than he is a clinician. The patient was a single girl of 27 years. She had been absolutely well until six years previously. She had finished high school at the age of 18, and having no definite vocation had remained at home helping her mother with the household duties. After three years of household drudgery in a large family consisting of a father, mother, six brothers, and three sisters, she became decidedly dissatisfied with her lot in life and soon developed a characteristic functional vomiting syndrome. She consulted a surgeon in a large city and with no preliminary study, was explored surgically and had her right ovary removed. Her symptoms were entirely relieved and, following this hospital experience, she became interested in nursing and was admitted to the nurses' training school. For several months she got along quite well, then gradually a state of nervous exhaustion, plus fullness and discomfort immediately after meals, made their appearance. It was not long before she began to regurgitate a portion of each meal. The surgeon who had performed the first operation was consulted and again, without study, subjected the patient

to an appendectomy. After this second operation she was again relieved of her symptoms and for a period of six months she remained at home and obtained a maximum of rest and relaxation. She then re-entered the training school and managed to complete her course of study. During the last year the old symptoms of exhaustion, nausea, belching, epigastric fullness, and regurgitation of food soon after eating once more made their appearance. She again sought medical advice and an X-ray study of the gastro-intestinal tract was made. The roentgenologist reported the presence of a possible duodenal ulcer, and without further ado a gastro-enterostomy was made. Almost immediately her symptoms became aggravated, and in addition to the persistence of her pre-operative symptoms she began to experience annoying heartburn and regurgitation of large quantities of bile. After a year of almost complete invalidism she was explored for the fourth time by another surgeon, who added an entero-anastomosis just distal to the gastro-enterostomy. Her troubles were not alleviated in any way by this procedure, and again the net result of the operation was but to add an entirely new symptom, that of epigastric hunger pain, to her already formidable list of complaints. The poor girl was now in a terrible predicament: if she tried to eat she was annoyed by fullness, belching, nausea, and regurgitation of bile-stained gastric contents, and if she refrained from food she was bedeviled by an epigastric ache or pain which could be relieved only by eating. The epigastric pain interfered seriously with her sleep, she lost more weight and strength, became more exhausted and constipated, and for a period of two years was absolutely bedridden.

Examination at this time revealed a sad-faced girl of twenty-seven years, with a pallid, pasty complexion and definite evidence of malnutrition and exhaustion. Her weight was but 101 pounds, whereas formerly it had been 120 pounds. She belched loudly and continuously and regurgitated bile-stained gastric contents occasionally. A mild secondary anemia was found, and a test meal revealed a total acidity of 22, free hydrochloric acid of 12, with much bile in the specimen. The gastro-enterostomy appeared to be normal on fluoroscopic examination, but the entero-anastomosis could not be visualized. It was felt that the gastro-enterostomy and entero-anastomosis should be taken down to re-establish the normal continuity of the bowel. It was carefully pointed out to the patient and her parents that the operation in itself would not cure her symptoms, inasmuch as they were basically of functional origin, and that it was merely the first step in a program of rehabilitation. With this understanding the abdomen was opened for a fifth time. The duodenum and gastro-enterostomy stoma appeared to be entirely normal, but the entero-anastomosis presented a highly inflammatory appearance, and on opening into it, a long strand of heavy linen thread was found buried in inflammatory tissue. The gastro-enterostomy and entero-anastomosis were taken down and for a few days her convalescence was uneventful. Then the old symptoms of fullness, belching, and regurgitation after eating once more made their appearance. Food was withheld and she was given 2,000 cubic centimeters of 10%

glucose and normal saline intravenously each day. Three-fourths of a grain of amytal was given twice a day and intensive psychotherapy was begun. As soon as possible she was given small portions of dry food three times daily, and later was permitted small amounts of water between meals. The symptoms were readily controlled and when she left the hospital three weeks later she had gained eight pounds. After her return home she made rapid progress and for a year enjoyed excellent health. During this time she followed instructions carefully, leading a retired life, obtaining a great deal of rest and relaxation, and coöperating fully. At the end of this year, she felt so well that, against advice, she returned to a normal mode of living, went on general duty as a nurse, attended parties, and in every way tried to make up for her lost years by cramming her hours full with work and pleasure. Gradually she became exhausted, and the old symptoms of functional indigestion and nervous vomiting began to reappear. She was re-advised by letter, and soon had her symptoms well under control. In the last few years she has gotten along very well except at those times when she has become unduly exhausted. Self-induced rest and dry diet has served to control the symptoms without difficulty on each recurrence.

Comment: This case history is a sad but illuminating one. Had the functional nature of her complaint been recognized at the proper time she might have been spared five major operations, untold suffering and expense, and six years of semi-invalidism. At no time did she present symptoms that should have brought the ovary, the appendix, or the stomach under suspicion. Her history at first was perfectly characteristic of nervous vomiting, and the psychic background for the development of this syndrome was fairly obvious. She was unhappy with her lot in life and could see no future other than continued drudgery in the kitchen for the welfare of her unappreciative brothers and sisters. The vomiting syndrome was her expression of rebellion and dissatisfaction with the situation, and should have been recognized as such before the first operation was performed. It is easy to understand how the original basis for her trouble became clouded and entirely forgotten as the years went on, and more vomiting and still more operations became the rule. The picture of functional indigestion and vomiting was finally complicated by symptoms suggestive of peptic ulcer, which symptoms were apparently produced by the inflammatory mass surrounding the linen thread foreign body in the entero-anastomosis. A distressingly high percentage of patients with functional vomiting have had one or more useless and unnecessary surgical procedures carried out before the true nature of their complaint has been recognized. It is with the hope of sparing these unfortunates much unnecessary surgery that this presentation is made.

DISCUSSION OF DR. W. R. JOHNSON'S PAPER

By WINGATE M. JOHNSON, Winston-Salem, N. C.

After hearing Dr. Johnson's paper I can well understand why Dr. Alvarez, in a recent letter to me, referred to him as "one of my favorite pupils"; and I am convinced that the great teacher conferred upon his pupil much of the common-sense he himself has in such abundance.

I am really a little disappointed in the paper, however; for I could find in it almost nothing to disagree with, and, as Robert T. Morris once said, "When men smile and agree, progress weeps."

Dr. Johnson presents admirably a discussion of a condition that is all too common, but that is also all too commonly ministerpreted. Two tragic mistakes are apt to be made in dealing with it. One is to take it too lightly, the other to take it too seriously. In the first case, the patient is apt to be dismissed with the pooh-pooh manner one would use in dismissing a child after a trifling injury. He is not paid the compliment of having a thorough examination made, but is told that it is all due to nerves or imagination and the thing to do is to forget it. The patient knows that no effort was made to find any real trouble, and consciously or subconsciously resents this neglect. Naturally obtaining no relief, he—or more often she—goes to other doctors, and then, unless fortunate enough to find one who will give a sympathetic hearing, the chiropractor or dietary faddist or Christian Scientist is visited.

There are two reasons, at least, for giving even a manifest neurotic a thorough examination, besides the perfecting of one's technique: one is that it will inspire confidence, the other that occasionally something real will be found.

When the other mistake is made of taking the vomiting too seriously, a surgically-minded doctor is apt to hang it on to a physical basis and remove that basis: as in the second case reported, on the installment plan. This type of patient almost invariably craves operations anyhow, and readily acquires the habit. I have known such patients to plan for an operation with the same zest she would get ready for a trip to Bermuda. Once the operation habit is formed, it is hard to keep some of these patients from the hands of the surgeons; hence one should be as wary of the first operation as of the first drink, for either may call for others in rapid succession.

The only issue I would take with Dr. Johnson is a minor one, and I believe we can agree on it. I don't believe he means to be taken too literally when he says that *every* patient with functional vomiting should be put to the expense of an X-ray examination of the gastro-intestinal tract. Here I think is one of the most difficult points of judgment a medical man has to employ. Personally, I would like to have every patient I have with any persistent disturbance of the digestion X-rayed; but it does mean quite an added expense, and often after a thorough physical examination, when the

case is quite obviously functional, one can so appeal to the patient's reason and gain her confidence that she will respond quite well. Unless the response is prompt, however, I do ask for the X-ray examination; but hesitate to use it as a routine in—for example—over-worked school teachers, knowing the size of their pay-checks and the price of board in our city.

Dr. Johnson points out the part that mental unrest plays in the causation of this condition, and says that "while the normally constituted person is able to bear up under a tremendous load of worry, unhappiness, and grief, the psychically inadequate or nervously unstable person will frequently break under such strain." This calls to mind the vexing question of just where the normal leaves off and the abnormal begins. Twelve years ago Dr. E. A. Strecker published a fascinating study, "The Non-Specificity of Mental Disease," in which he argued that any individual might possibly lose his mental balance under sufficient stress. He illustrated his point by a diagram of three circles. Within the inner circle was unreality or mental disease; the zone between it and the intermediate circle represented the normal mind or reality; between the intermediate and the outer circles was the zone of defense or resistance, while encircling this zone and pressing in upon it was the environment or reality. The defense zone in normal individuals can withstand much more pressure from the environment than in an individual with poor heredity. The suddenness of the thrusts and the frequency with which they happen may also play a part. "Thus, Mary Jones at twenty-five may be able to meet successfully an attack of influenza, at thirty she may mentally survive the unfaithfulness of her husband and desertion, and at forty-five she may overcome the deleterious influence of the climacteric, but were all these events to occur practically simultaneously, she might not be able to withstand their combined destructive effect."

This conception has helped me to understand the reaction of different individuals to environmental difficulties better than any other explanation I ever saw.

Once more I want to congratulate Dr. Johnson upon his excellent paper, and this audience upon the privilege of hearing it. He has set a high standard for himself in future efforts.

BRONCHOSCOPY AS AN AID IN DIAGNOSIS OF PULMONARY DISEASES

By Louis H. Clerf, M.D.
Bronchoscopic Clinic, Jefferson Hospital, Philadelphia, Pa.

In a study of the history of disease it is interesting to note the influence exerted by new methods or aids in diagnosis. Their introduction often is followed by the discovery of new clinical entities or, more often, by an apparent increase in frequency of occurrence of conditions previously believed to have been rare. In 1912 Richardson reported the first case of abscess of the lung following tonsillectomy. The question arises whether

this was a new pulmonary complication or one that had existed previously but described under other diagnoses. Did the use of the roentgen ray aid in its recognition as an abscess? It is now recognized that abscess of the lung is a relatively common complication following operations on the throat and mouth. There is no reason to assume that its occurrence has been recent whereas these operations had been practiced for many years.

Primary carcinoma of the lung has been recognized as a distinct clinical entity for a long time. The cases, however, were few and practically never were observed during life. During the past fifteen years hundreds of proven cases of primary cancer of the bronchus diagnosed during life have been reported in the literature and a small number of cases have been successfully treated by surgical means. Although physical examination of the chest and roentgen studies have contributed to the diagnosis the major portion of the credit in making us conscious of bronchial carcinoma should be given to bronchoscopy.

In the last few years our attention has been directed to the frequency of occurrence of bronchiectasis in children. Is this the result of improvement in diagnostic methods or is bronchiectasis in childhood a new disease? The frequency of occurrence of bronchiectasis in children as well as in adults, the etiological factors responsible for its development and the inadequacy of the commonly employed methods of treatment have been brought forcibly to our attention with the introduction of iodized oil as an aid to the roentgenologist and the more or less routine employment of bronchoscopy as a diagnostic procedure.

Our knowledge of the anatomical localization of pulmonary disease with relation to the lobe of the lung involved also has been revised. It was believed more or less generally that upper lobe lesions were tuberculous while lower lobe tuberculosis in adults practically never occurred. In reviewing a series of consecutive cases of pulmonary abscess that came to the Bronchoscopic Clinic, Jefferson Hospital, for treatment, it was found that slightly more than 50 per cent involved an upper lobe. It was also noted that 70 per cent followed surgical operations, notably tonsillectomy or a dental procedure. In addition it was found that a solitary cavity in a lower lobe may be of tuberculous origin.

Among the more recent observations in the diagnosis of pulmonary diseases are those made in connection with the diagnosis of bronchial obstruction. Roentgenologists and internists should be familiar with the phenomena produced by partial and complete obstruction to a bronchus. The common occurrence of bronchial obstruction in pulmonary disease and its influence on the development of serious complications and sequelae should emphasize the importance of its recognition.

Briefly stated, partial bronchial obstruction results in a condition described as obstructive emphysema. This is manifested roentgenographically by increased aeration of one or more lobes of the lung during the entire respiratory cycle, with displacement, away from the affected side,

of the mediastinal contents, heart and diaphragm during expiration. If obstruction becomes complete there is produced obstructive atelectasis. The typical case of obstructive atelectasis should offer no difficulty in diagnosis. It may be confused with extensive pulmonary fibrosis. It is amazing, however, how often an erroneous diagnosis of pleural effusion, empyema or unresolved pneumonia is made. The diminution in size of the airless lobe or lobes involved, with elevation of the diaphragm on the affected side and displacement of the heart and mediastinum towards the involved lung should be conclusive. Many cases of obstructive atelectasis are preceded by obstructive emphysema. Atelectasis is common in endobronchial neoplasm and also is often observed in bronchial foreign body of long duration.

While the diagnosis of partial or complete bronchial obstruction can usually be made by physical examination and by roentgen study of the chest, difficulties are encountered in establishing an etiologic diagnosis, that is, in determining whether the obstruction is new growth, foreign body, compression by an extrabronchial lesion or one of many possible causes. In these cases the history is of great importance as also is a knowledge of the development of symptoms. The history of choking and gagging followed by a wheeze with physical signs indicating either partial or complete obstruction of a bronchus would suggest aspiration of a foreign body. I wish to emphasize at this point the importance of a wheeze heard particularly during expiration. This has been designated as asthmatoid wheeze. In order to disassociate it from asthma, it would be better to designate this symptom as a wheeze and nothing more. It bears no specific relationship whatsoever to asthma. It indicates the presence of partial bronchial obstruction whether this be caused by foreign body, new growth or thick, tenacious secretion.

Neoplasms of the lung manifest themselves variously. The relatively frequent occurrence of primary carcinoma of a bronchus should make us cancer conscious. Wheezing may be one of the first symptoms although non-productive cough, indefinite pain in the chest and slight hemoptysis are commonly observed as early symptoms. A careful study of the lungs will often reveal partial obstruction of a bronchus. From a roentgen standpoint it is important to observe these cases under the fluoroscope in addition to the usual roentgen studies or to have films made at the end of inspiration and expiration. It is only by this procedure that one will recognize obstructive emphysema. If obstructive atelectasis has developed as a result of complete occlusion of a bronchus this phenomenon will be observed on the roentgen film irrespective of the time of exposure during the respiratory cycle. Although the earlier reports on carcinoma would indicate that cures could be secured by relatively simple endobronchial measures and by deep roentgen therapy it is our opinion that nothing short of complete surgical extirpation is worthy of consideration. If this is to be practiced the diagnosis should be made early.

Benign growths of a bronchus are not common and are particularly difficult of diagnosis. Several patients with papilloma of the bronchus have been observed where diagnoses of pulmonary abscess, tuberculosis and bronchiectasis have been made. In these the long continued bronchial obstruction has resulted in bronchiectasis. Obviously bronchoscopy is imperative for diagnosis. If a well developed bronchiectasis is present treatment presents an exceedingly difficult problem. It has been our experience that bronchiectasis secondary to bronchial obstruction often improves remarkable as soon as the obstruction has been completely removed so that drainage and aeration of the lung are established.

The use of iodized oil has added greatly to our knowledge of chest diseases. Various methods of introduction are practiced. To be effective it is necessary to deliver the iodized oil into the area to be visualized roentgenologically. At the Bronchoscopic Clinic we use the bronchoscopic method of instillation exclusively believeing that this permits of accurate placement of the iodized oil and also gives the additional knowledge secured by direct visualization of the interior of the trachea and larger bronchi. One can readily appreciate the importance of the bronchoscopic method in cases of obstructive atelectasis. Iodized oil usually is not necessary to establish a diagnosis of atelectasis. Its use does not add much towards determining the type of obstruction. It is difficult if not impossible to introduce iodized oil beyond the point of obstruction unless direct methods are utilized. I need but state that the possible causes of obstruction to a bronchus with lobar atelectasis are benign or malignant new growth, foreign body either opaque or non-opaque, thick tenacious secretion, broncholith, bronchial compression produced by benign or malignant extrabronchial lesions and tuberculoma. To distinguish between these is difficult indeed unless one can secure the aid of a bronchoscopist.

DEMENTIA PRAECOX AND THE GENERAL PRACTITIONER

By Dr. J. W. Ashby, Raleigh

Dementia praecox literally means precocious dementia or dementia at puberty and it is a term that has been applied for a great many years to the most prevalent mental disease with which the psychiatrists have any contact, but the term is unfortunate as the patient does not always dement and the mental malady does not always occur at puberty, consequently in 1911 Bleuler suggested the name Schizophrenia, which indicates a splitting of the psyche, considered to be the real fundamental symptom of the disease. The term dementia praecox has been used for so many years, however, that we still find many of our authorities are continuing to use this term. The term splitting is most descriptive for the reason that a person usually has a duel existence in so far as he thinks in the world of reality and the world of phantasy.

Psychiatry as a special branch of medicine did not exist one hundred and fifty years ago. The practitioner treated the mental problems which

came to him with the same understanding that he treated other medical problems. It is stated that in New York State at that time the mental patients were sent to the New York Hospital by the attending physicians who continued their treatment of these patients in the general wards. There were certain practical difficulties with excited patients and later on mental patients were provided for in separate institutions instead of in general hospitals. This separation removed from the practicing physician his contact with mental patients as far as his treatment is concerned, but the general practitioner continues to see the mental patients in their incipient stage and those who are sent to a hospital such as the Central State Hospital at Raleigh have reached the stage of maladjustment that it is apparent to everyone the patient is suffering from a mental condition. The general practitioner seldom is interested in the classification of mental diseases. He is prone to think of all those who suffer from a mental outburst as being "insane" and he has not attempted to become familiar with the terminology which is used by psychiatrists and to ascertain the form of mental disease from which the patient is suffering and his prognosis. The terminology used for mental diseases is published by the National Committee for Mental Hygiene and endeavors to cover all mental ailments, but the life study of the individual governs to such a great extent the type of the psychosis that it is difficult at times to make an immediate diagnosis upon a cross-section examination and one should remember, in passing, a precaution expressed a few years ago by Dr. Christian, of Boston, who remarked that he was seriously considering writing a paper on the possible danger to any patient in having a chronic illness easily diagnosed. This should be remembered in all mental conditions, but especially in the subject of this paper, dementia praecox, which is recognized as a chronic mental malady with a questionable outlook. It has generally been considered as a functional psychosis. Now and then an effort is made to place it in the organic group, but Dunlap, of New York, and many other pathologists have been unable to find any changes in the brain cells characteristic of this disease. In the classification of 1934 for the use of hospitals for mental diseases dementia praecox is classified under the head of "disorders of psychogenic origin or without clearly defined tangible cause or structural changes." There are four types of this condition which is thought to be an end result of maladjustment. When a patient reaches our State Hospital the maladjustment is apparent to everyone and the delusional trends are frequently well fixed, and the patient is lacking in insight, but in the prepsychotic stages which are seen by the general practitioner many of these cases could, unquestionably, be diagnosed and possibly assisted before they are sent to an institution. These prepsychotic symptoms are "lack of attention," which means a person is day-dreaming, self-absorbed and unable to concentrate upon his environments. It is interesting to note in passing that we have a patient in our hospital in whom this condition was recognized while she was in high school. She was examined at that time by a physician to ascertain if she

was not feeble-minded, but this was prior to graduation in high school and it is needless to say that a feeble-minded individual could never graduate at high school, but it is evident she was displaying at that time the symptom "lack of attention." The other two symptoms are "ideas of reference" and "somatic delusions." The ideas of reference mean that the person thinks he is being criticized. He thinks that remarks which are made with no reference to him are personal in nature and frequently it causes such a disturbance in this individual that he will give up one position after another because he thinks he is being talked about. The somatic delusions is where the person feels that he has some bodily ailment which is not borne out on physical examination. A patient who has somatic delusions will consult a general practitioner and be given a careful physical examination and will then perhaps be informed that there is nothing wrong with him, but he would perhaps be given a prescription indicating that he is to take a tonic three times a day. During this prepsychotic stage unquestionably the individual realizes that something is wrong. He realizes that something is amiss in his personality and is looking for assistance. These individuals who display these symptoms are usually about the adolescent age and they are shy, seclusive and inclined to avoid competitive games, and are lacking in self-reliance. They escape as it were from reality. Sometimes they escape by being diligent students and it is frequently found that dementia praecox cases are precocious in class work. The surgeon who removes a mole from a man's face knows it is the proper treatment, but he can not assure this patient years afterwards that he has prevented a case of cancer, but if the patient who is displaying the cardinal symptoms of a prepsychotic nature is relieved of his stress and strain and is placed in environments to which he can become adjusted as much could be done for him as the surgeon does in the case indicated.

In thinking of mental hygiene it should be given the same consideration recorded the prevention of any other disease. The pediatricians should be especially interested in this phase of preventative medicine. Psychologists tell us that there are three native traits you would expect to find in the infant—"lack of support or fear of falling," "a sudden loud noise" and "a sudden sharp pain." A child who is afraid of the dark, afraid of the boogyman and builds up other phobias is simply being misdirected and laying the foundation for future difficulties.

The cause of this mental disorder is difficult to explain but in thinking of causes of mental disorder generally we must remember the predisposing factors and existing causes. Under the head of predisposing factors, heredity, unquestionably, takes the first place. Not so much heredity per se as various debilitating and toxic conditions in the parents, the most pronounced of which are tuberculosis, alcoholism and syphilis. "General conditions of this sort impair the germ plasm and produce defects in development as a result" (White). The second unquestionably is caused by stress and strain and the inability to make the proper adjustment to normal conditions. In our hospital at the time this paper is written we have

2,048 patients. Of this number 455 are epileptics, 60 inebriates, 1,123 cases of dementia praecox, leaving only 410 for the other types of mental diseases. It is estimated that two-thirds of dementia praecox cases occur between the ages of fifteen and thirty. Heredity, as I have said, plays a part in the etiology and it is said to be not so frequent in child and parent as it is in brother and sister. Of the 1,123 patients mentioned as being in our hospital there are 32 siblings, one grandmother, daughter and grandson; one mother and one daughter; one father and daughter and one case of father and son. This does not indicate a strong hereditary trait, but we are not in possession of any accurate history of the ancestors of all of our patients by any means.

The treatment of dementia praecox is not encouraging. It has been mentioned that this is a chronic mental malady, and a hasty diagnosis should not be made for this reason. The patient does not always go on to rapid deterioration and frequently there are remissions with the patient indicating a very good adjustment to his environments. These remissions may go on for a long time and the patient may to all appearance be making a satisfactory adjustment but unquestionably a certain amount of personality is lost in all cases of dementia praecox, and in many the mental deterioration is quite rapid. Under supervision and control, and the lack of conflicts, many of these individuals adapt themselves well to routine life. Dr. Adolph Myers makes the statement, the first thing to be done in the case of a mental illness is to separate the patient from the scene of his conflicts; then to ascertain his educational level and find something to occupy him in the range of that level. The occupation mentioned is frequently occupational therapy, and it is advisable to give the individual something that will be of a constructive nature to restore as far as possible self-confidence. Dr. George Kirby in his presidential address before the American Psychiatric Society last year made this statement: "Notwithstanding, waves of interest and exaggerated claims for various drugs, glandular products, vaccines, elimination of infection, surgical operations, etc., the fact remains that we know of no chemical agents, biological products, physical procedures or surgical measures of proven curative value in psychiatric disorders with the single exception of general paresis and small groups of cases associated with thyroid deficiency or due to focal brain lesions." On the other hand, he says treatment of mental disorders has advanced tremendously along psychotherapeutic lines during the last thirty-five years. Unquestionably, we understand dementia praecox much better than we did thirty-five years ago. We understand the mechanisms and the delusional trends but no one thus far has been able to state definitely its exact cause or prescribe an exact cure for it. To my mind it reminds me somewhat of pneumonia in this regard. Unquestionably, the pathology of pneumonia is well understood at the present time, but I do not believe there has been any marked decrease in the number of deaths from this disease in recent years. Psychotherapy is the most valuable asset in the treatment of many forms of conditions and under the heading of

psychotherapy would be included psychoanalysis, but there will be no attempt to go into psychoanalysis at this time other than to say that it is not always considered advisable in dementia praecox for the reason it would not cure the mental disease and if you would get the patient to the stage that he would have an insight into his delusions you might destroy his world of fantasy in which he takes a great deal of delight. In closing I simply wish to emphasize the importance of being on the lookout for the young boy or young girl who is not feeble-minded, but is displaying a tendency to become seclusive. He may perhaps be brought to you by his parents with the statement the child is lacking in attention, has ideas of reference and physical ailments which are not disclosed by a physical examination.

TUBERCULOSIS IN CHILDREN AND CHILDHOOD TUBERCULOSIS

By P. A. Yoder, M.D., Winston-Salem

(Read before the Medical Section of the North Carolina State Medical Society, Pinehurst, N. C., May 7, 1935)

Probably no field of research in modern medical science has received as much intensive attention in recent years as tuberculosis in children. And as yet, no fair-minded worker in this field claims the investigation has nearly been completed, nor that present conceptions and accepted ideas are infallible. However, an enormous amount of definite, and scientifically accurate, data has been compiled. And while future studies may require minor modifications of some phases of present theories and practices, the basic facts and important clinical aspects of the subject have been worked out satisfactorily and are almost universally accepted as authentic.

The tuberculosis bacillus is a notoriously erratic performer under all conditions and especially so when it gains access to the body of the human child. Some of its clinical manifestations in such a host are as dissimilar as though produced by two distinct micro-organisms. This fact formerly led to much confusion in terminology, clinical significance, prognosis, and a number of other features of the problem. Much has been done by the National Tuberculosis Association's Committee on Diagnostic Standards to clarify the situation by adopting a definite plan of classification. This plan divides all pulmonary cases into childhood and adult types. Childhood type tuberculosis (sometimes called tracheo-bronchial, or primary, or first infection, and still further back Hilum Tuberculosis) is defined as, "Lesions in the lung and associated tracheo-bronchial lymph nodes, resulting from the individual's first infection with tuberculosis bacilli." Adult type tuberculosis includes lesions resulting from all subsequent infections, whether exogenous or autogenous.

Of course the childhood type complex may result from ingestion of bacilli as well as inhalation; or it may begin from a direct infection of

nose and throat structures, especially the tonsils; but wherever in the body the infection occurs, it's development follows the same general plan, with minor differences, due to the anatomical characteristics of the organ or tissue involved. Also this complex may occur in a previously uninfected adult or adolescent just as well as in a child. This fact, plus the opposite fact that adult type not infrequently occurs in infants and young children, is responsible for most objections to the terminology adopted.

However, when tuberculosis bacilli are first introduced into an individual they produce an inflammatory reaction in lymphoid tissue and lymphatic structures, characterized by a tendency to become a generalized infection. In a large majority of cases the body's defense mechanism is able to limit the process which eventually consists of the original site of infection (or primary focus), the intervening lymphatic channels and collections of lymphoid cells, and the formal regional lymph node which drains the area involved. All of these elements tending to go through the characteristic tuberculous changes of: 1—infiltration; 2—caseation; 3—fibrosis; and 4—calcification. During and shortly after the first infection takes place, the individual becomes specifically allergic, and subsequent lodgements of the bacillus produce a localized ulcerative process, due to excessive tissue sensitization.

The original infection, especially if dosage of organisms is heavy, may be too much for the patient to handle, and bacilli then spill over into the blood stream, with consequent bacteremia and the development of generalized miliary tuberculosis. Also during the caseation stage a lymph node may rupture into a vein, with the same result.

Primary, or childhood type, lesions may be single or multiple. They vary greatly in size. They usually occur in the lung and associated tracheobronchial nodes, but may be in the intestine and mesenteric nodes, or in the tonsil and cervical nodes, or elsewhere. The condition is comparatively benign, causes few very mild or no symptoms, and no definite physical signs. For accurate diagnosis they require tuberculin skin testing and X-ray films taken in two positions—postero-anterior and oblique. Practically all cases with proper handling are easily brought under control. They need, first and foremost, of course, to be separated from the infecting open case; and thereafter to be carefully protected from further infection, at least until enough time has elapsed for some specific resistance to have developed, as well as allergy. They need some extra rest—usually an hour in bed after return from school is sufficient, some sun exposure—and some extra nourishment if they are under standard weight. They need careful attention to health habits, and prompt correction of any vitality sapping condition that may be present—especially badly diseased tonsils. They are non-infectious and perfectly safe to their contacts.

Rarely this type of involvement is extensive enough or acutely active enough to produce fever and other clinical evidences of illness. Such cases of course should be more energetically treated—up to and including

strict rest in bed, X-ray therapy of caseous glands, and other measures usually employed in adult type tuberculosis.

Adult type, or reinfection tuberculosis, in children, on the other hand, is an entirely different picture. It follows, in general, the course of the disease in an adult, except that it is usually of a more acute form; is more often basal or subapical; and on the whole responds less well to ordinary treatment. The younger the child the more likely and the more pronounced these exceptions are likely to be found. The symptoms, physical signs, and X-ray findings are the same as in the grown person. The prognosis, as in the adult, depends principally upon the amount of involvement when the disease is discovered and upon the prompt institution of vigorous treatment. Collapse therapy, especially artificial pneumothorax, is advisable in almost all cases where there is one lung good enough to permit its use—except in miminal cases where there is no X-ray evidence of caseation; and in those, where a trial of bed rest fails to show definite improvement, or any extension of the pathology.

Other than pulmonary manifestations of secondary, or reinfection type tuberculosis, are too numerous to be discussed, but will be merely mentioned. Most of them are certainly due to endogenous reinfection—as the anatomical structure of their sites of development would prevent an external source for the invading bacilli. Bones, joints, meninges, kidneys, urinary bladder, spleen, liver, pericardium, intestines, and both male and female genitalia, are frequent sites of localization of this hematogenous spread. These do not differ from the same conditions in the adult. Some cases of generalized, or miliary, tuberculosis are due to a reinfection process—and in fact some authorities hold that all such cases should be so considered; others say that this condition is a complication of either first or second infection types. Whether first or second infection, miliary tuberculosis is almost always, as its sinister compatriot tuberculous meningitis always is, a last infection.

In conclusion let us emphasize that:—

1. Childhood type tuberculosis is a comparatively mild disease, with lesions of varying size and number, and possible in various locations of the body, usually the lung, which may at times liberate organisms into the blood stream.

2. These organisms, or others from exogenous sources, finding lodgement on specifically allergic tissue produce a localized inflammatory process— the so called "Adult Type Tuberculosis"—which in children is an even more serious disease than in an older individual.

3. Since practically all tuberculosis begins in childhood, further reductions in morbidity and mortality rates probably can be easiest effected by attacking energetically this phase of the problem.

SECTION ON PUBLIC HEALTH AND EDUCATION

Dr. J. C. Knox, Chairman, Raleigh

May 7, 1935

MALARIA INCIDENCE AS SHOWN BY A BLOOD SMEAR INDEX IN A TYPICAL EASTERN NORTH CAROLINA COUNTY

By E. R. Hardin, M. D., Lumberton

We know that malaria is prevalent in all the counties in Eastern North Carolina; but there is little data as to the extent of infection.

Carter, of the U. S. Public Health Service, in his report of malaria in North Carolina in 1913 said: "At no place was I able to obtain any definite statistics as to the prevalence of malaria fever, not even as to its comparative prevalence or virulence. In the absence of statistics I can only say that there is much malaria in East North Carolina, mainly a rather mild type, tertain, but there is some estivo-autumnal."

In 1914 Von-Ezdorf, of the U. S. Public Health Service, made a survey of eight southern states, North Carolina among them, and from the returns received he estimated that 4% of the population or six hundred thousand people, in a total population of fifteen million, had malaria.

In 1917 the mortality from malaria in North Carolina per 100,000 population was 7.0 for the white and 19.8 for the colored. These figures have a greater significance when we consider the fact that most of our malaria is in the eastern counties.

While we have no accurate statistics as to the prevalence of malaria the surveys that have been made in Eastern North Carolina show that malaria is a public health problem of considerable magnitude.

There were 17 deaths from malaria in Robeson County in the years 1928 to 1932 inclusive. We do not know how many cases occurred during this period as a case of malaria is rarely reported by the physicians. All of the physicians however agree that malaria has been very prevalent the last two years.

Robeson County is a typical Eastern North Carolina county. It has an area of 990 square miles and a population of 68,000; three races and many tenant farmers. Most of the people engage in farming. The surface is extremely flat and the county is traversed by several large swamps which have numerous tributaries. There are many ponds, but a number of these have been drained.

Very few cases of malaria were seen by the health officer until recent years, and the few smears sent in were nearly all reported negative for malaria. Mosquito control masures are practiced in Lumberton and the other small towns in the county.

There were some complaints of malaria in the vicinity of two small ponds in 1931 and 1932. In August, 1931, I made blood smears on 65 people in homes near these ponds and six or 9.2% were positive for malaria. In every home visited members of families who did not have malaria said that they had had chills in the last six weeks. Most of them were taking quinine or chill tonic.

We could not get these ponds drained at the time because of the objection of the owner and lack of interest on the part of the land owners in that section. In April and May, 1933, I made 83 blood smears in different homes adjacent to these ponds, and only two showed positive for malaria. The same month I made 67 smears in two villages on Lumber River near Lumberton; none of these showed positive for malaria. Sixty-five slides were examined locally and the others were examined at the State Laboratory.

In March and early April, 1934, at the request of Mr. Marion Cowper, who has supervision of the ERA drainage program in the State, I made blood smears in 19 of our larger white schools and one Indian school. These schools are located in all sections of the county, five are in towns and one in a mill village. A total of 661 smears were made and 7 or 1.05% were reported positive.

Mr. Cowper came to our county in August, 1934, and made, with me, field investigations of certain areas where malaria was suspected or known to be prevalent. This survey was made in 15 localities in different parts of the county, and dippings were made in numerous ponded swamps, ponds, ditches, canals and borrow pits.

The anopheles quardi-maculatus was found to be breeding in most of these places, and many adult mosquitoes of this type were captured in the homes and barns of the people living in two communities.

On December 14, 1934, I made 90 blood smears in a house to house canvass in a one-mile radius of the small mill ponds previously mentioned where we found quadri-maculatus breeding in great numbers in August of the same year. Of this number 42 or 46.6% were positive for malaria and 32 or 76.2% of the positives were estivo-autumnal type. The high rate of infection in this locality was expected but the large percentage of the estivo-autumnal type was a great surprise. These ponds are located on a small branch and only a few feet apart. They are surrounded by a dense growth of trees and bushes, and their banks are lined with grass and other vegetation for some distance from the water line. There are many dead trees in the pond and the water is full of logs.

One of our mill villages is located in about one-half mile of an old mill pond that was drained years ago. A drainage canal has been cut through this pond, but many ponds of water remained in the bed of the old pond, and anopheles quadri-maculatus were found breeding there in August, 1934. Last fall and winter many people in this village had malaria. In March this year I visited a number of homes in this village

and made 29 blood smears on children and adults. Of this number eight or 27.6% were positive for malaria.

From December, 1934, to February, 1935, blood smears were made in other localities as follows: 15 around a small bay or pond near Lumberton, positive one; 69 near a large mill pond, positive three; 26 in homes near a small swamp, positive two. The total number of blood slides made in these areas was 110, with six or 5.4% positive for malaria.

The total number or blood smears made in all the survey work in the county during 1934 and 1935 was 1,194, and the total number positive for malaria was 137 or 11.4%. If however the 663 smears made in the schools in March and April were excluded, and only the slides taken in the winter months considered, the percentage of positives would be 24.4%.

All the blood smears in the 1934 and 1935 survey were made by the thick drop method as follows: after puncture, a large drop of blood is allowed to accumulate on the finger and the slide held under it and brought in contact with the blood by a rotary movement of the hand, the blood being spread over an area about the size of a dime. The slide is not permitted to touch the finger. The blood smears were all sent to the Department of Malaria Investigation of the U. S. P. H. Service, Washington, D. C., for examination.

Dr. Carter, after his malaria survey in Eastern North Carolina in 1913, said, "The drainage canals and indeed all the large feeding ditches are cut with perpendicular sides and wide bottoms four feet or more. The result is that the smaller stream of water which they usually carry does not cover the bottom but trickles from side to side among grass and other obstruction and forms pools not connected with the stream. Especially is this true where the banks have caved in. We have a 52-mile system of drainage canals in our county. These canals were dug 22 years ago, and I understand that only one attempt has been made to clean them out since that time. They were dug exactly as Dr. Carter describes, and the result has been the same. Last August two physicians reported that they were treating numerous cases of malaria along these canals, and the ERA case worker in this district stated that she supplied quinine for 45 people at one time. In December, 1934, I visited homes for approximately five miles along the canals in this area and made 203 slides on children and adults. Of this number 52 or 25.6% were positive for malaria, and 29 or 59.5% showed estivo-autumnal type. Here also the preponderance of the estivo-autumnal type of infection was not expected.

Blood smears were made in two small Indian schools in this area but only on the children living in less than one mile of the canal. Out of a total of 52 smears, 23 or 44.2% were positive for malaria, and 11 or 47.7% showed the estivo-autumnal type. During the same month, 47 blood smears were made in homes near the lower end of the drainage canals and about 16 miles from the other area, of this number 8 or 17% were positive for malaria.

From the blood survey work in our county I draw the following conclusions: First, that blood smears made during March, April and May do not give an accurate index of the malaria infection in any given area. I feel sure that the 663 blood smears made in our schools in March and April would have shown a much higher percentage of infection had they been made in the fall or winter months; second, while there is apparently very little malaria in some sections of the county, there is an alarmingly high rate in other areas due to local conditions. The survey as a whole indicates a rather high rate of malaria infection in the county; third, this is the only accurate method of locating areas of endemic infection and of obtaining reliable information as to the prevalence of malaria; fourth, we should let the local physicians know that we are doing all we can to control malaria, and that we expect them to coöperate by reporting cases or local areas of infection.

We are making every possible effort to locate our worst sources of malaria infection and to secure ERA drainage projects for all such places. Projects have been approved and work has already begun on the two most conspicuous of these, namely the two ponds and the canals described in this paper.

INTESTINAL PARASITES AS FOUND IN RURAL SCHOOL CHILDREN IN DUPLIN COUNTY

By Dr. C. H. White, Duplin County Health Officer,
Kenansville, N. C.

A. County
- a. Location and topography
- b. Climate
- c. Rainfall
- d. Population

B. Customs
- a. Industries
- b. Sanitation

C. Available facilities
- a. Budget
- b. Personnel

D. Intestinal parasites
- a. Procedure
- b. Parasites
- c. Correlation of parasitic infestation with physical and mental defects in white and colored

E. Administrative control
- a. Educational
- b. Medical profession
- c. Follow up

Duplin, which is one of North Carolina's southeastern counties, is bounded on the north by Wayne, on the south by Pender, on the West by Sampson and on the east by Onslow, Jones, and Pender. It has a total area of approximately 790 square miles and ranges from 40 to 50 feet above sea-level. Its soil is composed of five major types, such as Norfolk fine sandy loam, Norfolk sand, Portsmouth sandy loam, Portsmouth sand, Orangeburg sandy loam, and various admixtures of the above. The average rainfall is 56.3 inches and the average temperature is 70 degrees Fahrenheit.

The county has a total population of 35,103, of which 22,116 are white and 12,987 are colored. It is largely a rural district with several small towns, the largest of which has a population of 1,222. The population varies as quite a number of workers are imported during the trucking season.

Due to its rainfall, climate, type of soil, etc., farming is the principal industry. Tobacco, cotton, corn, strawberries, potatoes, beans, cucumbers, peppers, cabbages, etc., are the principal commodities raised. Various commodities are raised the year round. During the warm months of the year a large per cent of the population spend much of their time in the field, barefooted, especially those of school age.

As the county has had no public health department until the present year, sanitation is at a low ebb. In the county only three towns have public water supplies and only two have sewage disposal systems. Thus approximately only ten per cent of the entire population is supplied with a public water supply system and six per cent with a public sewage disposal system. The remaining per cent of the population is supplied water with pitcher pumps, overflows, springs, etc. Upon inspection the sanitary inspector found 95 per cent of privies in an unsanitary condition. Quite a large per cent of the inhabitants have no knowledge of sanitation whatsoever.

The Duplin County Health Department was organized August 1, 1934, as a two-piece unit which was composed of a whole time health officer and nurse with an annual budget of $5,530.00. The Department existed as such until sufficient funds were obtained from the United States Public Health Service through the North Carolina State Board of Health for the addition of a sanitary inspector and a secretary. The kindness of the North Carolina State Board of Health enabled the Health Department to complete its undertaking.

The warm climate, an abundance of rainfall, poor sanitation, absence of public health facilities, farming the principal industry, sandy soil and a rural population make an ideal environment for the existence and propagation of intestinal parasites.

The hookworm survey put on by the Rockefeller Foundation in the South many years ago and some work performed by the Relief Department in 1933, aided considerably both in the collection of specimens and in the education of the community.

As the Department had no technician and the State Laboratory of Hygiene was unable to make the examinations, it was decided to include largely only those given physical examinations which was restricted to the first three grades and a few special cases in the higher grades. The examinations were not restricted to those who had suggestive symptoms of intestinal parasites but included whole groups. Such a survey gives an accurate account of the incidence as a large per cent of the higher age group wear shoes the entire year.

The State Laboratory of Hygiene furnished small tin boxes which were given each child examined physically, and collected at a later date. There were 2,553 white children and 3,227 colored children in the group, to which 3,127 boxes were distributed and 1,579 collected.

The specimens were examined by the county nurse, who is a trained technician, and me. In order to determine efficiency of various methods, we used Bass' calcium chloride method, the ordinary microscopical examination and centrifuged specimen. The results obtained by the calcium chloride and centrifuged methods were practically identical and both methods were approximately 15 per cent more efficient than the ordinary microscopical method.

There were 901 specimens of white school children and 678 specimens of colored school children examined with the following results:

White children positive	*White children negative*	*Total white children*	*Per cent positive*
616	285	901	68

Col. children positive	*Col. Children negative*	*Total colored children*	*Per cent positive*
489	189	678	72

Type and per cent of intestinal parasites found in white school children:

Nectar Americanus		*Nectar Americanus with Ascaris Lumbricoides*		*Taenia Saginata*	
No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*
549	89	18	2.9	3	.48

Ciliates (Balantidium coli)		*Hymenolepsis Nana*		*Ascaris Lumbricoides*	
No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*
5	.81	21	3.4	20	3.2

Intestinal parasites found in colored school children:

Nectar Americanus		*Nectar Americanus with Ascaris Lumbricoides*		*Taenia Saginata*	
No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*
457	91.4	7	.14	0	0

Ciliates		*Hymenolepis*		*Ascaris Lumbricoides*	
No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*
0	0	21	4.3	4	.08

Comparison of physical and mental defects of those white school children infested with and those not infested with intestinal parasites:

POSITIVE FOR INTESTINAL PARASITES WHITE

No. cases	*Underwt.*		*Overwt.*		*Age group*	*Teeth def.*		*Tonsils inf.*		*Observed anemia*		*Repeated grade*		*Heart murmur*	
	No.	*%*	*No.*	*%*	*6-12*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
616	445	72	51	8		272	44	296	48	316	51	142	23	43	7

NEGATIVE FOR INTESTINAL PARASITES WHITE

No. cases	*Underwt.*		*Overwt.*		*Age group*	*Teeth def.*		*Tonsils inf.*		*Observed anemia*		*Repeated grade*		*Heart murmur*	
	No.	*%*	*No.*	*%*	*6-12*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
285	135	47	40	14	6-12	76	27	119	42	78	27	42	14	9	3.5

Comparison of mental and physical defects of colored school children infested with and those not infested with intestinal parasites:

POSITIVE FOR INTESTINAL PARASITES

No. cases	*Underwt.*		*Overwt.*		*Age group*	*Teeth def.*		*Tonsils inf.*		*Repeated grades*		*Heart murmur*	
	No.	*%*	*No.*	*%*	*6-15*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
489	303	62	44	9	6-15	73	15	122	25	161	33	53	11
189	106	56	20	11	6-15	24	13	51	27	56	30	17	9

Those cases found positive for intestinal parasitic infestation were reported to the parents, who were given literature on the variety of infestation and the methods of prevention. They were also advised to consult a family physician for treatment. Negative cases were also supplied with literature as no negative laboratory report is 100 per cent accurate. Even if such was the case with such a high per cent of infested cases all in the community remain subject to acquiring such infestation.

The local medical profession was supplied with up to date literature on the subject of treatment of various intestinal parasitic infestation. The subject was also discussed before the local medical society meeting, at which time all physicians were requested to report all those cases treated. Quite a number of cases were treated by the Health Department.

SUMMARY

The intestinal parasitic survey together with a brief sanitary survey of Duplin County presented the following points:

1. Duplin County presents an ideal environment for high intestinal parasitic infestation.

2. Centrifuged and flotation methods gave approximately same per cent positive which was about 15 per cent higher than the ordinary microscopic method.

3. The intestinal parasitic infestation of those examined was 70 per cent with local variations.

4. The Nectar Americanus variety of hookworm resulted in the highest per cent infested.

5. There is a distinction between intestinal parasitic infestation and the disease.

6. Intestinal parasitic infestation results in an increase in underweight, anemia, defective teeth, repeating of grades and heart murmur.

7. The incidence of intestinal parasitic infestation is higher in colored children than in white children with less marked concomitant signs and symptoms.

8. A higher per cent of thyroid enlargements were noted in those infested which is probably due to malnutrition.

9. Tetrachlorethylene is the most effective and less toxic vermicide on the market for hookworm and round worm. Hexylresorcinol is not on the market at present, therefore it was not used in the present survey.

10. Balantidium coli results in an occasional chronic dysenteric condition with a liver abscess a rarity.

11. Stovarsol together with high protein diet appear to be a specific for balantidium coli as recommended by Aguilar.

THE CONTROL OF TUBERCULOSIS FROM A PUBLIC HEALTH STANDPOINT

By M. T. Foster, M.D., Health Officer, Fayetteville, N. C.

The war against tuberculosis has been amazingly successful. In 1900 tuberculosis was the leading cause of death, but in 1933 it occupied the fifth place as a cause of death. Statistics from the Metropolitan Life Insurance Company show a decline of 71.2 per cent in the mortality during the 33 years which had elapsed.

Because of this gratifying picture, public health workers cannot afford to turn their attention away from tuberculosis. The disease is still a tremendously important public health problem because it remains the chief cause of death in early adult life. It is thoroughly believed that tuberculosis can be reduced to the position of a minor cause of death by the full coöperation of the medical profession, the public health organizations, the social agencies and the general public. This can only be brought about by public health education.

When writing a paper of this kind, there are certain accepted scientific facts to be merely mentioned. We all agree that tuberculosis is an infectious disease, the organism being the tubercle bacillus. There are two principal sources of human tuberculosis: the primary source is man himself; the secondary source is cattle. The tuberculin testing of dairy herds and the pasteurization of milk has practically eliminated this secondary source. Practically all observers agree that sputum from cases of human tuberculosis is the main source of spread of the disease. Infection takes place usually during childhood, either by ingestion or inhalation of tubercle bacilli. A positive tuberculin test indicates an infection has taken place by the tubercle bacillus, a negative test rules out the disease.

Since we agree that sputum from cases of human tuberculosis is the main source of spread of the disease, we should concentrate our efforts

on such cases and their contacts in order to prevent others from having the disease. Case finding, before the patient infects those around him, is not always an easy problem. The laity must be taught to go to their physician regularly, and to seek medical advice early, in order to locate tuberculosis in a curable stage before they have infected others. Coöperation of the physicians must be secured in order to have every case found reported. A free clinic should be conducted in each county several times each year for those who cannot afford private medical care. If, and when, a death certificate indicates death from tuberculosis, if this person has not been under the supervision of the health department, a visit should be made to the home and all contacts advised to report to a physician for an examination. The examination of all contacts should include a physical examination and tuberculin test. Those reacting positive to the tuberculin test should be X-rayed. This examination should be repeated every two years until several examinations have been made.

All cases of active tuberculosis found should be placed in a sanatorium if possible. Many counties do not have sanatoriums, and, if the State Sanatorium is not able to admit all cases, some of them must be isolated at home. Infection can easily be prevented in the home if the proper precautions are taken. Isolation of active tuberculosis cases in the home is not advisable if children under twelve years of age are present. When there are children in the home, a mobile tuberculosis cottage can be used to isolate the patient. Such a cottage should be designed for a single bed, no space allowed for visitors or furniture, a table and storage being built in the cottage. The building can be built sufficiently light to be moved to another residence when necessary. The middle third of the side walls can be screened to allow an abundance of fresh air. Sufficient room is allowed between the bed and side wall for the necessary care of the patient. The length of the cottage is that of a single bed. Visitors and children may talk with the patient through the screened side walls without being exposed to the disease in any way. No one should be allowed to enter the cottage except a nurse or an adult member of the family. Awnings should be provided to protect the patient from the sun; and sliding windows to keep out rain and intense cold. The location of the cottage should be such that the patient can easily attract the attention of some member of the household at any time during the day or night.

After the patient is isolated, certain precautions should be observed. All sputum should be collected in fly tight containers and burned. Individual eating utensils should be provided and sterilized after each usage. Equipment such as wash basins, towels, and other necessities should be used only by the patient. All linen should be sterilized before going to the laundry. Each patient should be furnished tuberculosis literature and taught to cover his mouth and nose when coughing or sneezing. The medical treatment of the patient is left entirely in the hands of the family physician. The health department nurse should visit the patient as often as necessary, placing special emphasis on prevention of spread of the

disease, and the necessity for frequent examinations by a physician of all tuberculosis contacts, for the purpose of making an early diagnosis of the disease.

All contacts should have preventorium care or extra care in the home in the form of rest periods, attention to the diet, fresh air, etc. This special care often improves the child's resistance sufficiently to overcome his infection, possibly preventing a tuberculosis breakdown in later life. The correction of physical defects and the giving of hot lunches in school to the malnourished helps to improve the child's resistance.

The care of infectious cases and contacts as outlined can be carried out by a health department of most any size, and would be far reaching in making tuberculosis a minor cause of death. However, larger units can go a great deal farther by offering the tuberculin test to all school children and teachers under their jurisdiction, retesting all negative reactors every three years.

The positive reactors should have a physical examination and X-ray. The physical examination and X-ray should be repeated every two or three years, until several examinations have been made, in order to be sure there is an early diagnosis, should the disease develop. By these examinations, many will be found needing sanatorium or preventorium care. The home of each child with a positive tuberculin test should be visited, tuberculosis literature given, and the source of infection looked for. Every member of the household should be advised to have an annual physical examination.

It is believed that the systematic carrying out of such a program in every county would eventually control tuberculosis and make the disease a minor cause of death.

DIPHTHERIA: ITS PUBLIC HEALTH SIGNIFICANCE AND CONTROL

By Dr. H. L. Sumner, Asheville

It is with a great degree of timidity that I attempt to present this paper on diphtheria before an audience of this character because it is no new subject to you and I have nothing new to present except a little review of the more salient characteristics of this disease.

Diphtheria is an acute febrile contagious infection caused by a specific bacteria, characterized by the presence of a false fibrinous membrane deposited on the focus of infection and accompanied by specific toxic systemic manifestations affecting principally the heart and the nervous system; locally the usual site, the membranes of the throat; occasionally, nose and larynx, rarely other mucous membranes and desquamated surfaces.

It is needless to go into the history of diphtheria except to say that it has been known and a very classic description given in the second century of this era. Since the advent of antitoxin and the later development of the

prophylactic toxoid for active immunization, the mortality rate has dropped from around forty-five to an average of about ten or even lower in some registration areas. The rate for North Carolina for 1932 was 5.1.

The diphtheria bacilli are slender, irregular rods varying in length from 1 to 6 microns and in width from 0.3 to 0.8 micron. They occur singly, in pairs and in short chains. They are sometimes curved and show clubbed enlargements in the middle or at the ends, and as originally pointed out by Loeffler, these club-shaped forms are characteristic. The diphtheria bacillus rarely shows true branching. The organisms are arranged in groups or with two or more elements almost parallel or may be so disposed as to look like a T or an L or Y.

The diphtheria bacillus is stained by all the anilin dyes, but seems to have a special affinity for alkaline methylene-blue. Stained by this dye, it shows a peculiar segmentation into granules. Granules stained by methylene-blue are present in nearly all true diphtheria bacilli.

Diphtheria bacilli can be cultivated without great difficulty on the ordinary laboratory media. They are usually associated with other organisms in the throat; however, they may be isolated most easily on Loeffler's blood-serum.

Much could be written about the pathology of diphtheria; however, here only the most salient features will be touched upon. Pathologically, the essential lesion is the degenerative and exudative (fibrinous) changes in the tissue beneath the affected mucous membranes in which the main effects of the toxin are seen. The change involves principally the epithelial cells of the mucous membrane concerned, also the heart muscles, lungs, kidneys, spleen, alimentary canal, lymph nodes, ductless glands, the bone marrow and the blood. The pseudomembrane is the result of degeneration of the epithelial cells, followed by increased exudation of fibrin and the formation and gradual increased thickness of the pseudomembranes.

LOCAL SYMPTOMS

The symptoms of diphtheria may best be understood by keeping in mind the fact that it is a disease showing local manifestations on the mucous membranes of the nose, throat, larynx or even lungs. These lesions occur at the site where the diphtheria bacilli have gained a foothold and are multiplying. Most frequently this occurs on the tonsils or throat with a subsequent formation of a grayish-white membrane. There may be difficulty in swallowing before the formation of the membrane, the throat is reddened and the tonsils (if present) swollen, the neck then becomes swollen and tender and the enlarged cervical and associated glands are noticeable. The difficulty in swallowing gradually becomes worse and with the extension of the membrane the voice may become husky and difficulty in breathing may ensue. Later, the face may become blue along with blueness of the fingernails and lips as the supply of air is gradually cut off.

GENERAL SYMPTOMS

The general symptoms are caused by the absorption of the soluble toxin which is produced by the diphtheria bacilli, and the severity of the general symptoms usually varies in degree with the severity of the local manifestations as described above.

The onset may be gradual with slight indisposition for a day or two and with a moderate degree of temperature. In other cases, the infection may begin abruptly with headaches, prostration, high temperature, rapid pulse and occasionally with convulsions. After the disease has progressed there is marked prostration and muscular weakness. The body may be covered with a cold perspiration, the pulse is rapid and at times irregular. There may be dullness and apathy, but usually, on account of the local symptoms (difficulty in breathing), there is much restlessness and excitement. The toxic effect on the general system may at times cause death before the difficulty in breathing has become marked. Cardiac manifestations due to the toxin may occur early or late in the disease or even after convalescence has begun.

Varying degrees of severity are seen in diphtheria cases, from mild cases in which there is practically no membrane and the general symptoms so slight that it is difficult to keep the child in bed, to cases so severe that death occurs within twenty-four to forty-eight hours of the onset of symptoms. Fortunately, such severe cases are not common.

Diphtheria may attack other parts of the body that are protected by mucous membrane. Nasal diphtheria is always dreaded, not only on account of the fatality in acute cases, but because in this situation it often becomes chronic and the diphtheria bacillus may be present for months. Wounded surfaces, too, may become involved, giving rise to wound diphtheria.

Among the complications of diphtheria are the carriers; however, carriers are not always complications, because individuals who have never had the disease may become carriers. The diphtheria bacilli have been found in the heart, blood, liver, spleen and kidneys. Post-diphtheritic paralysis is one of the most feared sequelae. This paralysis is of various types depending upon the nerves affected. The more common types are: (1) palatal, (2) cilliary, (3) extremities, (4) respiratory, and (5) pharyngeal. The heart muscles are often involved and the heart must be closely observed, not only during the disease but after the beginning of the convalescence. More rare complications are middle ear disease, diphtheritic conjunctivitis, renal involvement and an upset of the endocrine system.

Persons who come in contact with diphtheria patients may harbor the diphtheria bacillus, though remaining in good health, and thus become carriers of the disease. It has been estimated that 50% of all attendants on the diphtheria sick harbor the organism. In the work on carriers in all parts of the world and under various conditions, the percentage of carriers in apparently healthy individuals has been variously estimated

at from one in seventy-five to one in one thousand. Diphtheria is kept alive by these virulent strains in immune persons. It has been estimated that the danger is ten times as great for family contacts of cases as for those in simple association with known bacillus carriers. The dangerous carrier is he who harbors the virulent strain and this is usually obtained from the patient, convalescent, or from a third person who has come in contact with the patient. The bacilli may enter by way of the nose or throat so it is essential to obtain a culture from both in the search for carriers.

It seems to be generally accepted that all that active immunization does is to prevent the development of an attack of clinical diphtheria; it does not prevent the individual from becoming a carrier. However, it is by no means certain that this is so, the little evidence we have on the point being equivocal. A reduction in the carrier rate, however, even if it occurs, is probably a relatively minor factor. It may operate to keep the rate below the threshold of epidemicity, but it seems to be more probable that the carrier plays a relatively beneficent role as the cheapest source of naturally acquired immunity. It has been shown by Doull and others that carriers tend to develop carriers and presumably immunity, while cases have a much greater tendency to develop new cases. However, from studies in Baltimore and elsewhere, the carrier is still the principal source of recignized diphtheria. Approximately 77% of all cases are due to contact with carriers. There are various measures and methods for the cure of carriers; however, up to the present time, nothing has proven consistently efficacious, and so the relief of bacilli carriers is one of the unsolved problems in preventive medicine.

The diagnosis of diphtheria has been made much simpler due to our knowledge of the disease. In most cases, it is a combination of clinical symptoms and laboratory findings. The diagnosis cannot be made from the laboratory findings alone; however, negative cultures, if properly taken, are quite significant. A diphtheria carrier with a streptococcic sore throat might easily be mistaken for a case of diphtheria. These individuals give negative Schick reactions and have no clinical manifestations of the disease. Mild cases are often missed because of the failure of the physician to obtain a culture of the nose and throat. Oftentimes, a severe case will have a very insidious beginning and much valuable time be lost in waiting for membranes and other symptoms to appear. So in all cases where there are clinical symptoms or a suspicious throat, give the antitoxin and take the cultures of the nose and throat. Diphtheria must be differentiated from tonsillitis, quinsy, ulcerative sore throat, Vincent's angina, syphilis, tuberculous angina, thrush, herpes and scarlatinal angina.

Diphtheria is distributed practically all over the world. It is endemic but may be epidemic, as it has on many occasions. It prevails especially in the temperate zones and shows a preference for the cold, winter months, the maximum prevalence usually corresponding to the seasonal prevalence of scarlet fever.

The maximum incidence in some registration areas is between five and seven years; however, in North Carolina, 55% of all cases of diphtheria are in children under six years of age. 85% of all deaths from this cause occur in the same age group. By the time adult ages are reached, about 9% have had the disease. It shows no special preference for the sexes, but is more prevalent among whites than among colored.

There are many causes which predispose to this infection. Among them, improper housing, poor ventilation, insufficient sunlight; also colds, sore throats and especially scarlet fever and measles, and any irritants such as foreign bodies, adenoids, dust, that might cause an abnormal condition of the mucous membrane of the throat and nose, favor the localization and penetration of the diphtheria bacilli, and may thus act as a predisposing factor, as may any other condition that reduces bodily resistance. However, two main conditions that influence the prevalence of diphtheria are (1) a virulent strain of the bacillus, (2) susceptibility.

The duties of the epidemiologist in administrative control are many; he should make a sanitary survey of the premises and instruct the householder in the management of the case where the disease is in the home. Frequently the infection appears in asylums, hospitals, jails and other similar congested centers. Under such conditions of crowding, the disease may have a highly contagious tendency. The following measures are applicable: (1) the recognition and isolation of cases (2) the finding and quarantining of carriers (3) the discovery of the susceptible by means of the Schick test (4) active immunization of all susceptible persons (5) inspection of all susceptible persons every twenty-four hours and the use of antitoxin upon the first appearance of symptoms (6) epidemiological control, with disinfection, laboratory facilities and administration of local health measures.

Clinics for the immunization of children and the education of the public are essential. In the campaign for the immunization for children, the following activities should be carried out: (1) all children over eighteen months of age should have their susceptibility to diphtheria determined by means of a Schick test, (2) in infants under eighteen months of age the Schick test is not necessary due to the fact that any immunity acquired from the mother is transient inasmuch as no child under eighteen months possesses permanent immunity, (3) all infants over five and under eighteen months should be actively immunized, irrespective of the reaction to the Schick test, (4) all children immunized should be retested in from three to six months and re-immunized if they should give a positive Schick reaction. An energetic campaign for the immunization of the preschool child is a commendable and efficacious achievement. There is a growing tendency to give the toxoid without a preliminary Schick test to all children under six years of age.

In the control and prevention of diphtheria, we have knowledge of: (1) the causative organism, (2) mode of transmission, (3) Schick test

for susceptibility, (4) toxoid for an immunizing agent, (5) curative serum for treatment, (6) vital statistics showing that 85% of the deaths and a corresponding number of cases occur in children under five years of age.

Certain measures and various steps must be carried out if we are to successfully control this disease. The most important of these considerations are: (1) The private physician, in his relationship to the family, must be encouraged to play a greater part in the immunization of the infant in the home. To a greater extent it must become a part of his routine practice and at the same time an acknowledged procedure on the part of the family. However, there is a certain inevitable limitation to the development of this channel for immunization. There is surely no reason why the doctor, when he vaccinates the child for smallpox, cannot also at the same time give the diphtheria immunization. (2) It is obligatory, of course, on the part of our health departments that they recognize for themselves a more or less unlimited and practically permanent program. (3) The State Health Department to continue to use all available voluntary assistance, not only in the above mentioned occasional necessities for campaign revivals, but also in carrying out the continuous education of the parents, physicians and others, that is so necessary if this program is to be carried out successfully and established on a more or less permanent basis.

The work of Godfrey in New York State has shown that the injection of fifty to seventy per cent of the children over five years of age, has failed in numerous instances to produce any marked effect on the diphtheria incidence of a community. He has proven in many instances that the immunization of 30% of the children under five years of age and 50% of the children five to nine years of age, has produced an immediate and striking decline in the diphtheria rate of the community as a whole.

In the recent preschool clinics held in Buncombe County, 55.8% of the children examined were given diphtheria toxoid, concurrent with the smallpox vaccination. These figures, in my opinion, will indicate further advancement of the idea of compulsory diphtheria inoculation.

We should strive to obtain these percentages of immunizations, but we should not stop there. These figures may be much too low, for active immunization like antitoxin was introduced on a wholesale scale during a period when diphtheria was receding from a period of epidemicity. But, in my opinion, I think it not inappropriate to congratulate ourselves upon the progress that has been made towards the ultimate control of diphtheria in North Carolina. One might indeed be tempted to prognosticate its complete eradication, though this is perhaps too much to expect. In any event, the only reasonably sure protection for the individual is individual immunization.

SECTION ON SURGERY

Dr. B. C. Willis, Chairman, Rocky Mount

A NEW METHOD OF SEVERING THE URETERS FROM THE BLADDER AFTER THEIR TRANSPLANTATION AND REMOVING THE BLADDER

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Necessity prompts much thinking and gives birth to an occasional idea. But what one wonders at, once the idea is established as rational and tenable, why the idea was not thought out before or why one did not think the thought, thought by another!

The case, in point, is simply this: A woman with carcinoma of the cervix had been treated with radium. Following the radium treatment, there was a falling away of the bladder and vaginal wall, creating a large opening into which three or four fingers could be inserted and surrounded by a densely scarred ring. Though bound to die and wanting to die, this poor woman had to live and bear the constant soaking with urine and the excoriation and smell of it; she had isolated herself and was physically, socially and mentally unfitted. She needed "help to die, when she could not live."

The problem, after supporting her with blood and fluids, was to stop the soiling with urine, so long as she should live, with minimum damage and discomfort to her and with a simple operation. (A greater mercy would have been "death in her sleep," and never aroused from the anesthesia, but the surgeon can never act as executioner.)

This was the process of thinking, and the arrival at the idea: Coffey suggested the submucosal transplantation of the common bile duct and ureter at the meeting of the Southern Surgical Association in 1909 and his suggestion was carried out with the ureter by C. H. Mayo in February, 1912. Then, successively, Coffey suggested and used catheters in the ureters so as to transplant both ureters simultaneously. (I shall not discuss the disadvantages of the two methods, requiring an elaborate cleansing of the recto-sigmoid and the opening of a mucosa teeming with bacteria.) And, finally, Coffey suggested a necrosing suture, transfixing the ureter and intestinal mucosa, after anchoring the severed and tied-off ureter to the intestine in the submucosal position.

Difficulties began to arise with the necrosing suture: (1) The suture used to tie off the distal end of the ureter should not be used as the necrosing suture, because the implanted ureter might slip position. The fistula should be established proximal to the end tie and the tied-off end

of the ureter should be anchored to the whole thickness of intestine and not to the mucosa alone. (2) The suture if tied loosely, failed to cut through and if tied too tightly would cut through the intestinal mucosa before cutting through the ureter. (3) The suture failed to enter the lumen of the intestine.

At this stage of development of the necrosing suture method by Coffey technic No. 3, it immediately occurred to me that the above enumerated difficulties could be relieved by the use of a metal ring. (3) If the needle bearing the suture were passed through the ring in the intestine, it would of a necessity pass through the intestinal mucosa. (2) There was to be no difficulty as to loosely or tightly tied suture, the suture was to be tied securely and tightly down on the ring. (1) There was not the danger of shifting of the ureter, because the suture and ring held the ureter, with interposed intestinal mucosa in its grip. The suture would cut through the ureter into the intestine, more readily by a pull on the ring from intestinal peristalsis. Added to this, a thread tied to the ring and allowed to escape by the anus could be pulled upon at will and thus aid the cutting of the necrosing suture.

Just here, I found that Walker-Taylor had already suggested a metal ring, at a meeting of the Royal Society of Medicine, February 25, 1932. Coffey took to this suggestion, found it easy to insert the ring on an ordinary curved forceps into the straight rectum of a dog, but difficult into the human rectum which is directed backward and to the left, and contains valves and membranous folds. Coffey devised an olive tipped, hollow ended curved forceps, to carry a ligature, through which the necrosing suture was to be passed.

I found that an ordinary curved forceps, grasping a metal ring could, without danger, be passed by all folds and valves, when carefully guided from above. If there were any difficulty in passage, the ring could be liberated from the forceps and rolled between the fingers to any position in the recto-sigmoid. Or for that matter, a ring could be picked up anywhere along the extent of the colon by allowing the patient to swallow several small rings the night before and at operation pick them up and transfer them to the desired position. This procedure is of some importance if ever a uretero-intestinal anastomosis is made at any site in the colon other than the recto-sigmoid.

Beginning about 18 months ago, Charles C. Higgins of the Cleveland Clinic, still employing the submucosal position of Coffey to create a valve and the necrosing stitch of Coffey, began to experiment on dogs with a simultaneous bilateral transplantation of the ureters. He described his technic under the title of "Aseptic Uretero-intestinal Anastomosis" in the Surg. Gyn. & Obstet., Sept. 1933, Am. Jour. of Surg., Nov. 1933, and Jour. of Urology, June 1934.

Walters, in his paper before the Southern Surgical Association last year said: "Higgins has modified this method (the transfixion and necros-

ing suture method) by not dividing or occluding the ends of the ureters until the uretero-sigmoidal anastomosis has established itself; he prefers division or occlusion later, when the bladder is removed. In an experimental study of the so-called aseptic, suture-necrosis method, Mann and I found that immediate or eventual hydro-nephrosis occurred so frequently, even though urine appeared in the rectum from the fourth to the sixth day in most cases, that I have been fearful to use the method clinically."

Higgins in a letter to me of June 18, 1934, writes: "I have collected a series of fifty-two cases with three fatalities. We are more than enthusiastic over the results we have secured with its use during the past year."

My opinion, from what I can gather from various sources and from my own experience, is that there is no objection to the necrosing suture method when properly executed to create an appreciable fistula between ureter and intestine, and that the lateral anastomosis without interruption of the continuity of the ureters, of Higgins, is the one revolutionary suggestion and method since the original "submucosal transplantation" of Coffey. I shall describe and picture the technic of Higgins with a superimposition of my use of the ring.

Willie Mae House, a negro girl age fifteen, was pregnant when she was fourteen and delivered with forceps under great difficulties. The anterior wall of the vagina and bladder were widely lacerated, leaving a large, scarred, irreparable opening between vagina and bladder.

Operation, general anesthesia (gas and ether) mid-line incision below the navel, Trendelenburg position, whole pelvic basin exposed after packing. Both ureters easily identified without catheters, peritoneum incised and ureters gently stripped from their bed for an extent of three inches, at a location along the pelvic wall where they could most comfortably be laid against the recto-sigmoid, but as near down to where they were lost around the cervix and their insertion into the bladder. Incisions were made into the recto-sigmoid, lower on the left side than on the right, through the serosa and muscularis down to but not into the mucosa. The ureters were placed in their submucosal beds, for a run of about one and one-half inches and anchored in place at their lower ends by taking a stitch twice through the ureters and once through the intestinal mucosa and ring, held like a darning egg in the rectum against the mucosa. The ring tied with a silk thread, and held by a long curved forceps, had been placed in the rectum before the operation began. There had been no cleansing of the recto-sigmoid beyond an enema. The competency of a lacerated perineum had been proven by the injection of water and air. As the nurse gently delivered the ring on the forceps from below under guidance from above, it was pushed in position on the left side. The ring was then grasped with an Allis forceps through the whole intestinal wall. The ring on the right side was released from the grasp of the forceps and rolled into position where it was grasped by an Allis forceps. The rings thus

grasped established a fixed point, held the intestine perfectly and served to facilitate the cutting down to the mucosa and the laying of the transfixion and necrosing stitch through the ureters and through the rings. These silk necrosing sutures were tied down hard on the rings. The muscularis first, and then the serosae were united over the ureters with a Lembert stitch of zero chromic catgut. The lateral flaps of the parietal peritoneum were stitched, in turn, over this stitch line to the rectum.

The bladder was pushed away from the peritoneum above and around to the sides, forcing it as far as possible under the symphysis, and in closing the peritoneal wound, the peritoneum was anchored high to the muscle and fascia, thus beginning the liberation of the bladder and creating a much larger space of Retzius for the anticipated cystectomy. Two Penrose drains were placed in the bladder space for forty-eight hours.

The post-operative course was with but slight reaction, the urine began to flow by rectum within forty-eight hours. The rings bearing the necrosing ligature came away on the sixth and tenth days respectively. The fistulae were created and enlarged by gentle pulls on the rings long before the complete necrosis and liberation of the rings.

The cystectomy was completed a month later on account of the separation of the peritoneum and anchorage in a higher position and the separation of the bladder at the first operation, particularly, lack of bleeding was a great help. The ureters were identified as they entered the bladder and as they tugged upon the rectum when pulled on. A small slit was made into the peritoneum, the ureters clamped raw on the rectum, tied with chromic catgut and tucked into the rectum. (In my last technic this does not have to be done.) The small peritoneal opening was re-closed. The dissection of the bladder was carried down to the scarred opening high in the anterior vagina wall, and this opening in the vaginal wall was left open for drainage. Even the mucosa of the trigonum and down into the urethra was hollowed out by dissection and cautery. Two Penrose drains above, one below. (In my last technic the removal of the bladder is very easy with the ureters severed.)

The post-operative course was again uneventful, healing almost per primam, never any distension, the urine to the rectum kept up bowel movements and, down flatulency.

After the wide separation of the bladder at the first operation, the removal of the bladder from below was considered, but abandoned for these reasons: (a) The approach through a urine drenched field; (b) the high position within the peritoneum where the ureters emerged from the rectum difficult to reach; (c) the opening of the peritoneum through this route, might give rise to infection. However, with the method of severing the ureter to the bladder without reoperation and without reopening the peritoneum, may leave fistulous bladders unremoved or allow their removal from below. The bladder can be more readily separated when outlined under gentle distention, not applicable with fistulae. The bladder tucks

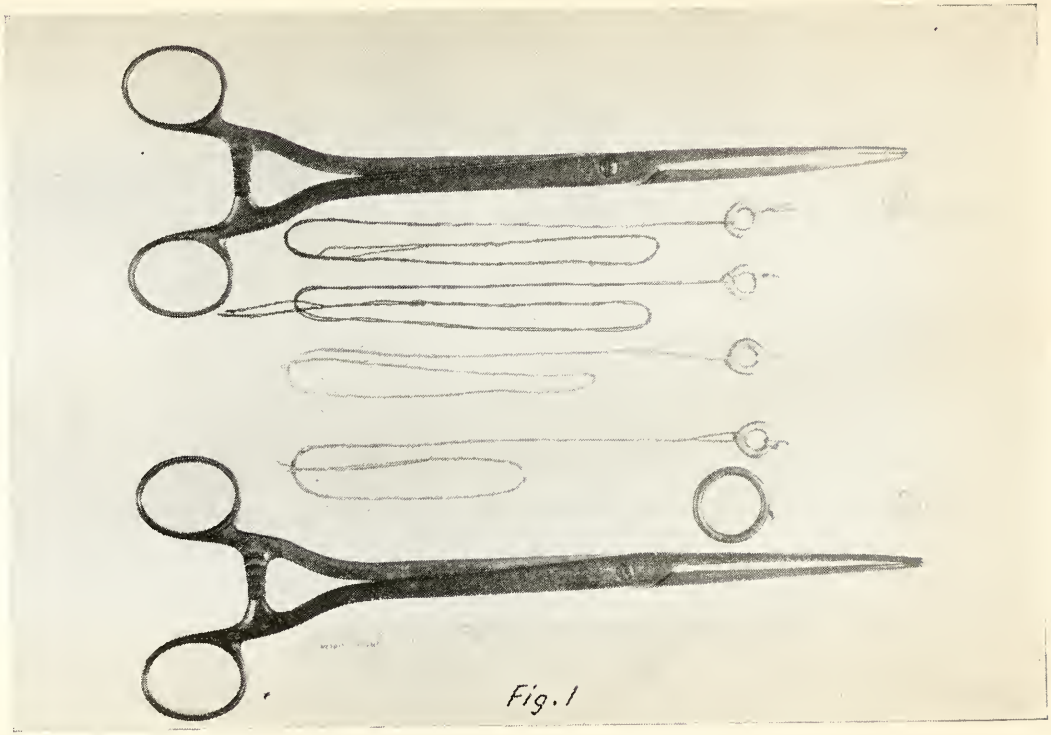
around in crannies and corners in a most surprising way, and care is required to remove it intact with ureters attached. Nevertheless, with the separation at the first operation, which can be nearly complete, so long as the ureters remain attached intact and will flow, the bladder in the female can be removed from below, along with the urethra through the vagina. I have orientated myself recently with partially filled and empty bladders in correcting cystocele and prolapsus. I shall report later after trying vaginal cystectomy first at autopsy.

Now, why could not a loop of wire, the same sort of a tonsil wire No. 9, be looped over the ureters and sever them in position, without removing the bladder, or, if the bladder were removed, make the operation simple by having the ureters already occluded and embedded?

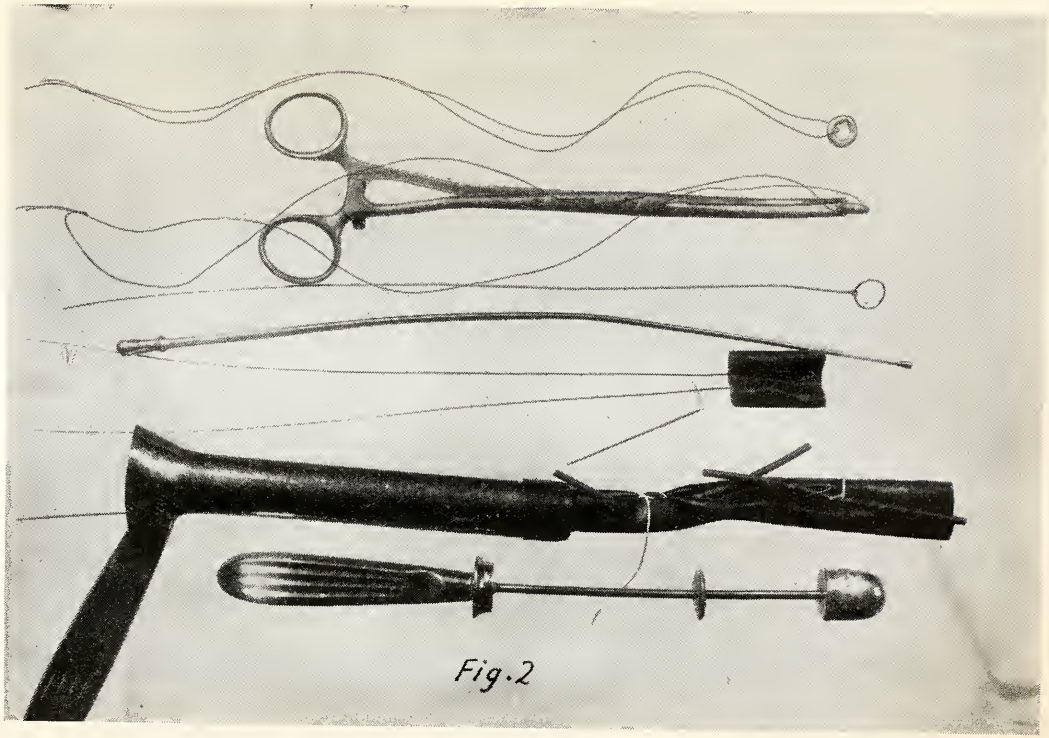
The following technic was followed: A rectal tube was inserted into the rectum. Both ureters were rapidly exposed. Two incisions were made into the recto-sigmoid through serosa and muscularis down to mucosa. A piece of tonsil wire was bent like a long hair pin, looped over the lower end of the right ureter and passed through the mucosa, at the lower end of the incision, into the open end of the rectal tube. Then a like piece of wire pierced the right ureter and was also passed into the rectal tube. The rectal tube was shifted down and the same procedure performed with the left ureter. The muscularis and serosa were closed over the ureter. The lower ends of the transfixion wire were bent for identification and attached to slight elastic tension. After three days under the guide of a proctoscope a small rectal tube was passed over the transfixtion wire to insulate it and the wire was touched with an electro-coagulation electrode and the wire cut through. On the twelfth day the lower wire, looping the ureter, was pulled down upon hard, and a low current arranged so that when the electrode was applied to the wire the effect would be not only to cut slowly through the ureter and rectal mucosa and to necrose the tissue for a slight distance around, but also, through the pull, to dislodge the ureteral ends.

In this particular case the great advantage lay in not having to reoperate to disconnect the ureters from the bladder and in every case a big advantage in not having to re-enter the peritoneum, even when carrying out the cystectomy.

The fate of the looped lower end of the ureter should depend, in large part, on the function of the fistula above it. If functioning actively, the lower end would certainly close. The lower end would, possibly, also flow. The lower end, at the point cut, lies behind serosa flaps, and would likely close with the aid of intra-intestinal pressure, like an enterostomy. If this should fail, there is still another chance at closure when the bladder is removed. This is a brand new technic, works very easily and rapidly. If any of you should try it, I should appreciate a word from you.



Instrumentarium consisting of a long curved forceps, metal ring with ligature and long suture. These five rings with necrosing suture attached have been recovered from the recto-sigmoid after having necrosed thru the ureter and intestinal mucosa in creating a uretero-intestinal fistula.



Various devices for creating a uretero-intestinal fistula: (1) Ring and necrosing ligature; (2) Stylet of flexible Oschner common duct probe; (3) Long looped hair pin wire, used to pierce the ureter and create a fistula by pressure or traction necrosis or by applying electro-coagulation current to distal ends. Model showing necrosing suture and also loop of wire used to sever ureter beneath serosa when uretero-sigmoid-ostmy is complete.

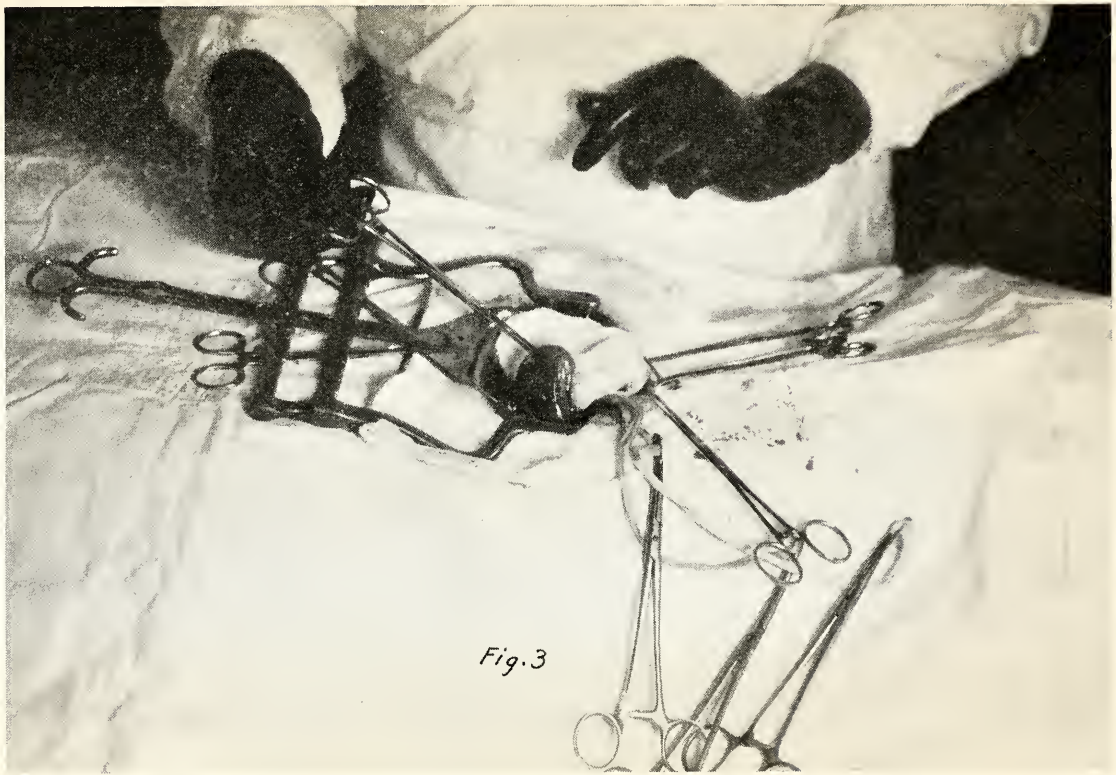


Fig. 3. The ring in the recto-sigmoid passed up by rectum and rolled into position.

Fig. 4. Exposing the recto-sigmoid and ureter, from behind the peritoneum, bladder pulled downward.

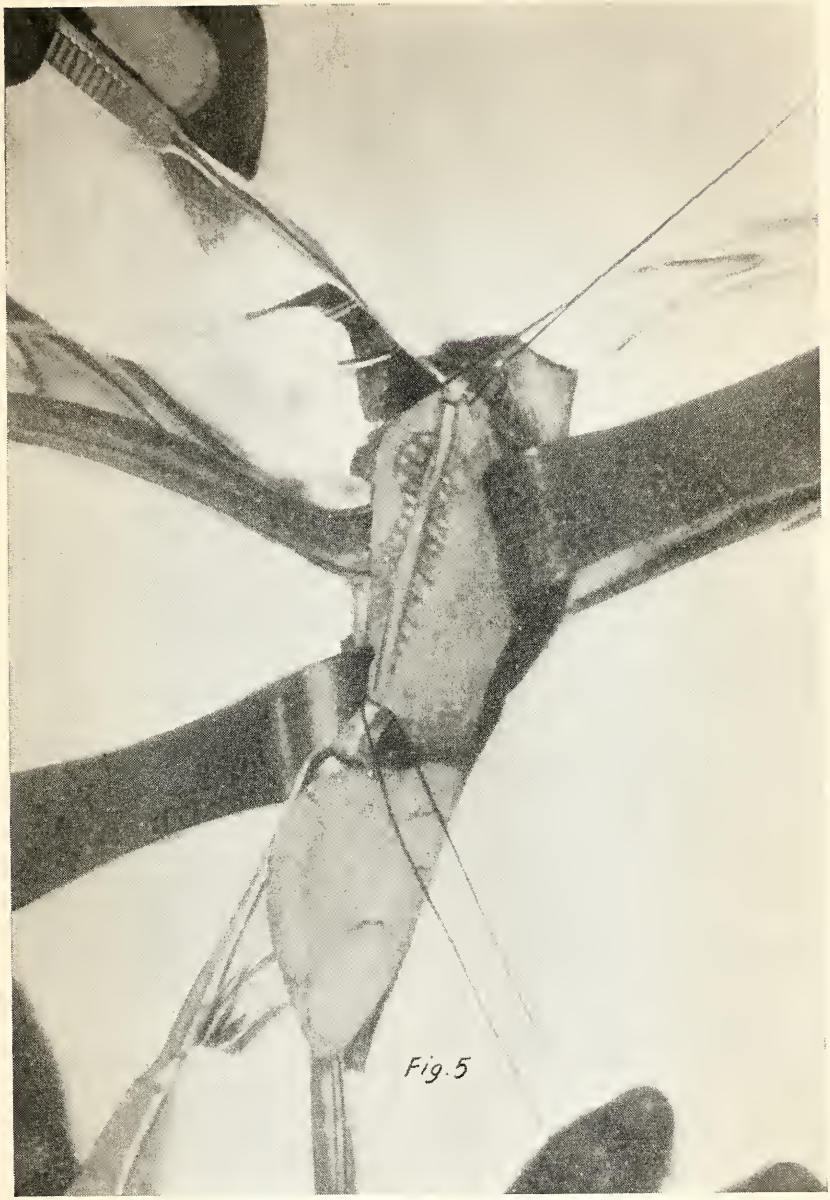


Fig. 5. Incision down to the mucosa, stretch of ureter lying on mucosa and held in position by two Lembert sutures, one at each end.

Fig. 6. Hair pin wire, looped over the ureter, one c.m. from lower end, and passed through the mucosa, down a rectal tube and out of the anus. It is this wire loop, which will cut through the ureter, either by pressure necrosis or by burning under the application of an electro-coagulation current.

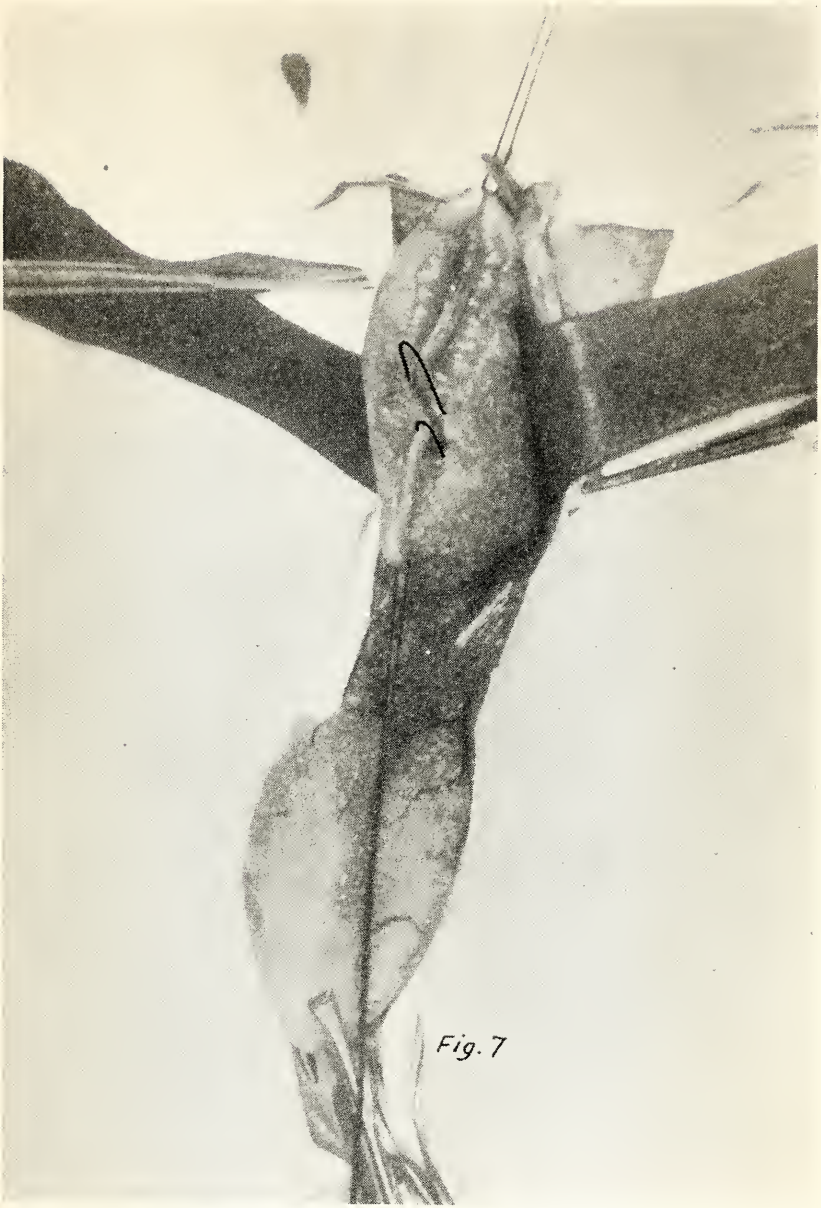


Fig. 7. One wire loop holding down the lower end of the ureter, the loop to sever the ureter. A second wire loop, above this one, transfixing the ureter, to cut through by necrosis or burning and create the fistula or uretero-enterostomy.

Fig. 8. The muscularis and serosa of the recto-sigmoid is closed over the stretch of ureter, lyong on the muosa. The hair pin wire, looping over the lower end of the ureter and passing through the musoca and out the anus, is pushed back up through the stitch line to illustrate its position, well above the emergence of the lower end. It is this wire, which severs the ureter.

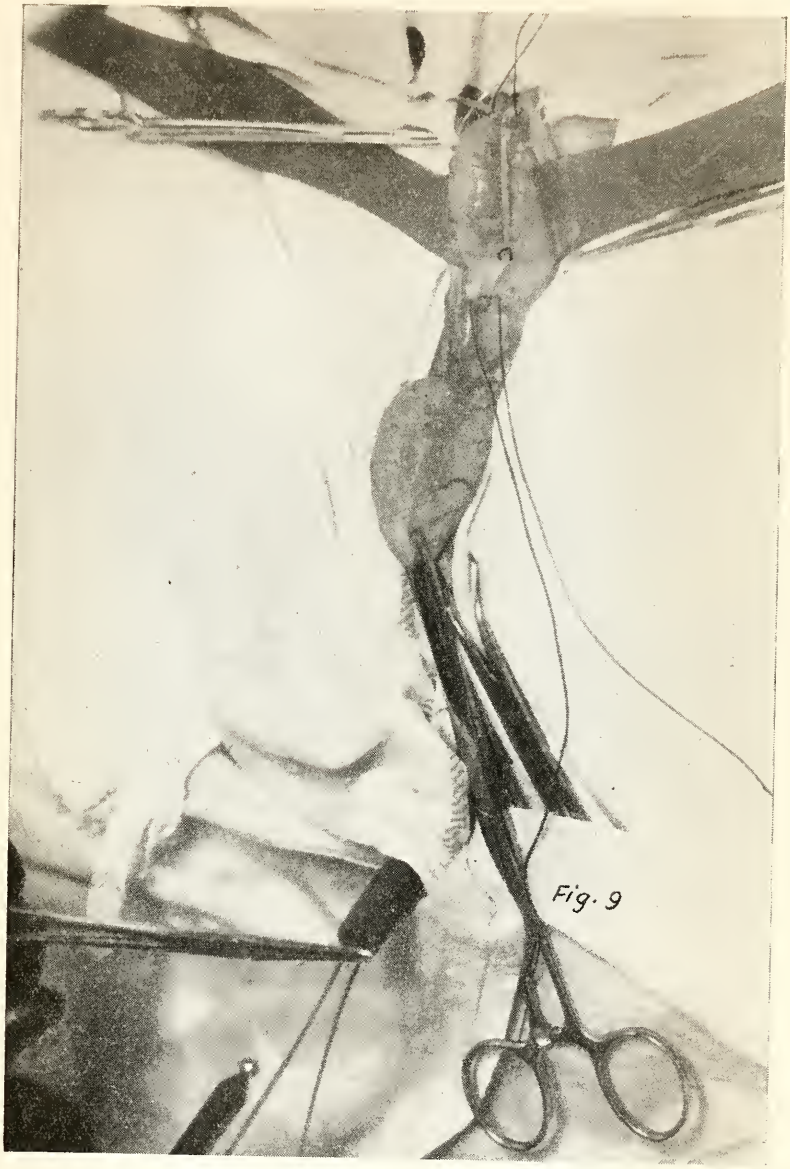


Fig. 9. The ureter lying on the rectal mucosa, the hair pin wire loop, pulling down on the lower end and emerging through a rectal tube by rectum. The electrocoagulation electrode being applied, first to the transfixion wire, creating the fistula and then to the looping wire severing the ureter.

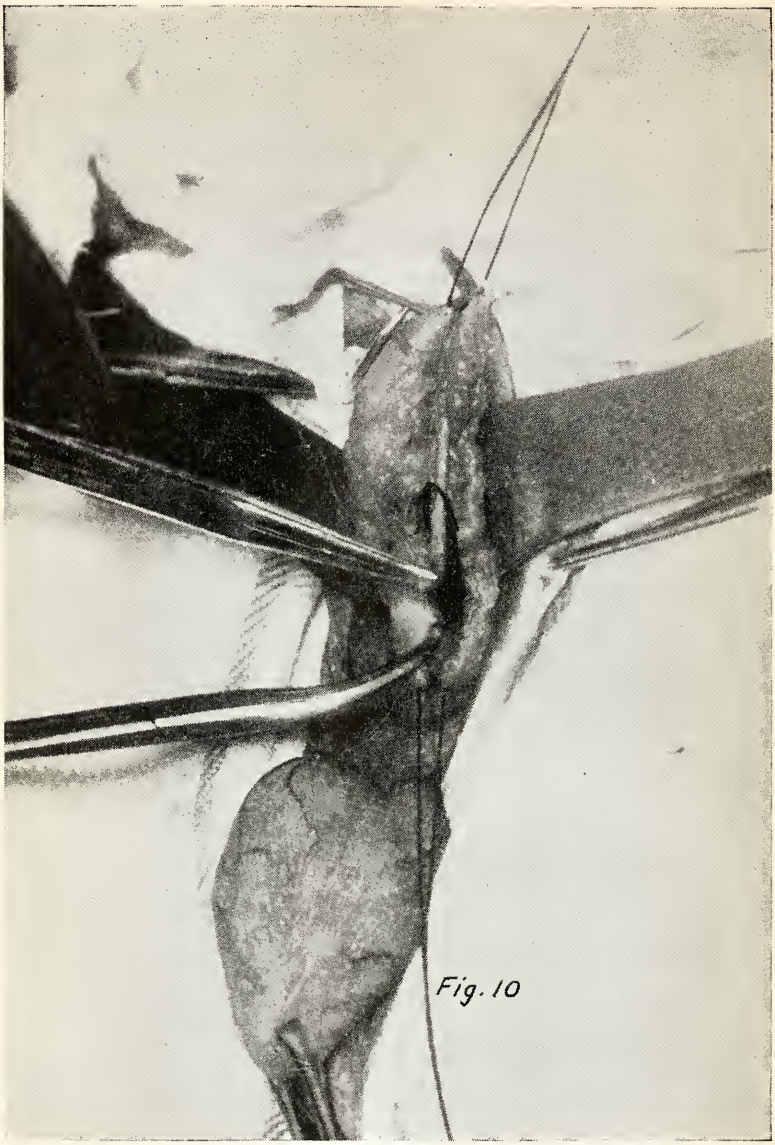


Fig. 10. The two ends of the ureter after cutting with the hair pin wire loop on applying the electrode of the cutting current below. The loop is again pushed up over the ureter (shown just above the upper clamp). If the ureter is pulled down upon hard by the loop and the current is very weak, there is, practically, no damage to the surrounding intestine and the ends pull apart for some distance. The fate of the upper, burned ends depends upon the function of the fistula (uretero-enterostomy) above it. Either closed or open would be satisfactory.

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COMMON BILE DUCT OBSTRUCTIONS

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The common bile duct, (ductus choledochus), is a continuation of the hepatic duct, after its union with the cystic duct from the gall bladder. It is about 7 centimeters long and normally, its lumen is about 3 millimeters in diameter, a little smaller than an ordinary lead pencil. It runs in the right border of the lesser omentum, and it is anterior to the foramen of Winslow. It passes behind the superior portion of the duodenum and

then runs in a curve in the posterior surface of the head of the pancreas. At this place, it lies in front of the inferior surface of the head of the pancreas. At this place, it lies in front of the inferior vena cava. At times, it is completely embedded in the substance of the pancreas. For a short distance, it lies along the right side of the terminal part of the pancreatic duct, and with it, passes obliquely through the wall of the duodenum. The distance transversed in the wall of the duodenum by the common duct varies from 1-3 centimeters. After uniting, the two ducts open by a common orifice or papilla duodeni about 7-10 centimeters from the pylorus, located at the mesial side of the descending portion of the duodenum. The union of the two ducts, dilated into an ampulla, is known as the ampulla of Vater.

The surgical treatment of diseases of the biliary tract in the past and present has been concerned chiefly with affections of the gall bladder. In considering the good and bad in this field of surgery, the common bile duct stands out pre-eminently above everything else and plays the principal role in our successes and failures; for, unlike the gall bladder, the common bile duct is indispensable yet it is so readily affected by diseases and operative traumas, the consequences of which are so often disastrous, that its surgical importance can scarcely be over-estimated. Frequently, both the satisfactory and unsatisfactory results from surgery of the biliary tract depend upon the condition of the common bile duct.

The important factor in all surgical lesions of the larger bile ducts is the degree of obstruction to the flow of bile from the liver to the intestines. For this and other reasons, the mortality and morbidity in common bile duct obstruction is in the liver just as the mortality and morbidity of ureteral obstruction is in the kidney. Consequently, our object should be to enhance our diagnostic acumen both by clinical observation and the diagnostic adjuncts that are at our disposal. This will help in reducing the number of "end stage pathology" cases we are operating upon. It should not be necessary for us to wait until we have jaundice, biliary tract infection, dilatation of the biliary tree, hepatitis, and pancreatitis before we are ready to urge operation. By means of early operations, we can prevent much of the damage to distant and adjacent organs and tissues.

The history of the illness is the most important detail in the case and if carefully taken will assist more than any other one factor in helping us arrive at an early diagnosis. A diagnosis of obstructing stone in the common duct is made at once from the history of repeated attacks of colicky pain in the upper abdomen followed by fleeting evidences of jaundice. The history of colicky pain years ago with slight jaundice very clearly observed by the patient is of great significance in the consideration of an immediate illness marked by pain, fever, chills and localized tenderness in the upper abdomen. When a patient has recurring attacks of upper abdominal pain with fever and jaundice and a history of a previous cholecystectomy with long drainage of bile after operation, we suspect stricture of the common duct. The history of slowly increasing and persisting jaundice with marked

weight loss with or without attacks of colicky pain suggests malignancy involving the common duct and obstructing it. A history of an illness often in a young person starting with malaise, indisposition, slight fever, digestive disturbances, and followed by jaundice which gradually grows less severe is in turn suggestive of an infectious jaundice. The presence of jaundice in any patient is immediately suggestive of obstruction to the free flow of bile through the common duct and such a patient should be considered to have common duct obstruction until proved definitely to have some other cause for his jaundice.

Several simple tests are of great value in determining whether or not the jaundice is obstructive, toxic, or hemolytic in origin. First, an examination of the urine for bile should be done. If bile is present in the urine, we know at once that the jaundice is not hemolytic in origin. Examination of the stool for bile is important. Since total absence of bile in the stools shows the presence of obstructive jaundice, the presence of bile in the stools shows at least that the common duct is not completely obstructed. Duodenal drainage is perhaps the most valuable diagnostic measure that we have for determining the type of jaundice which is present and it can be used even in seriously jaundiced patients where cholecystography is contraindicated. If bile is obtained through the tube, that is proof that the obstruction to the common duct is not complete. Also, if we obtain infectious material, pus, or debris through the tube, this is good evidence that we have infection plus stone formation. The daily examination of the urine for urobilinogen as recommended by Wallace and Diamond is considered at the Lahey Clinic to be of great diagnostic value. If urobilin is present in the urine, the common duct is not completely obstructed. Furthermore, if the urine shows abnormal quantities of urobilinogen, definite evidence of the liver's failure to absorb the urobilinogen from the blood due to faulty liver function is obtained. This simple urine test gives us evidence as to the presence of complete common duct obstruction and also as to the presence of liver failure. There are several liver functional tests. None of them, however, are believed to be very satisfactory. Graham himself says that he considers Iodeikon as being the most valuable liver functional test. The Bromsulphalein test, of Rosenthal and White, I believe, is the safest. We have no safe, simple, standardized liver functional test at our disposal such as we have for renal insufficiency. The van den Bergh test and the icterus index are useful in determining latent jaundice.

Some of the various conditions which may produce obstruction of the common bile duct are stones, strictures, inflammation, ulceration and carcinoma; and as the common bile duct is in intimate relation to the gall bladder, pylorus, duodenum and pancreas, it is affected by diseases of these organs. The most common causes, from a surgical standpoint, of obstruction to the common bile duct are stones, tumors of the head of the pancreas, malignant or inflammatory, impinging upon the common duct and producing complete or partial occlusion, and strictures of the common

duct—frequently a result of injury to the duct during operation on the gall bladder.

STONES IN THE COMMON DUCT

The frequency of stones in the common duct as shown in the figures given by Courvoisier from post mortem records at the Basle Pathological Institute is 3.9% of all cases of gall stones, and .4 of 1% of all post mortem examinations in a series of 2,500 post mortem examinations. Ae regards the most common location of stones in the common duct, there is a great deal of difference of opinion. Courvoisier found—in 123 cases—that the calculi were present throughout the whole common duct in 26; in the upper portion in 17; in the middle segment in 19; close to the duodenum in 20; and in the orifice of the bilairy papilla in 41. In almost one-half of the cases, the stone was close to the lower end of the duct. Out of 380 cases, Mayo Robinson found the stone to be at the duodenal end in 67%, in the middle portion in 18%, and at the upper end in 15%. Vautrin, however, out of 47 cases, found calculi in the part of the duct above the duodenum in 27; in the part in contact with the duodenum in 18; and in the Ampulla of Vater in 2 cases. The number of stones which may be found in the common duct is subject to great variation. In some cases, both hepatic ducts and the common duct are plugged with a soft, clay-like material which resembles putty very closely, both in appearance and consistency. In other cases, there are many faceted stones; and in still others, there may be single spherical stones. In the majority of cases, there are stones in the gall bladder also.

I will now recite several cases illustrating the different types of obstruction.

In common duct stones, not all cases are jaundiced. The absence of jaundice in no way precludes the diagnosis of partial obstruction of the common duct. A case in point is the following:

Case No. 26,817. Mrs. L. T., age 27. Admitted August 19, 1932. Married. C. C.: Chief complaint on admission was severe abdominal pain. She stated that she had been having attacks of kidney colic for years, but during the past few months previous to admission, they had occurred two to three times a week with intense abdominal pain in the right side near the coastal margin, radiating to the scapula and up to the right shoulder, and associated with vomiting. Her digestion was poor, but appetite good. There was epigastric heaviness and distention and gas after meals—especially foods containing fat, or fibrous vegetables. Had never been jaundiced. Had never had any urinary or menstrual disturbances. Married for several years. No pregnancies. A little more than one year previous, she was operated upon at another hospital, having her appendix, both tubes and one ovary removed.

Physical examination was essentially negative except for marked tenderness over gall bladder region. The gall bladder itself was not palpable. There was also tenderness in the right costo-vertebral angle. Had large ulcerated tonsils.

Cystoscopic examination was negative. Her van den Bergh test showed a very faint, delayed, direct reaction. Icterus index was 5. On September 3, 1932, her tonsils were removed by Dr. W. P. McKay. On September 10, 1932, patient had completely recovered from her tonsillectomy, and operation was performed under spinal anesthesia. Incision was made in the upper right quadrant. At operation, found a small, white gall bladder filled with stones. There were many adhesions. The common duct was distended and inflamed. The gall bladder was mobilized, and the common duct opened through a longitudinal incision, and many small stones were removed and much sand. Appendix had been removed at a previous operation. There was a large ovarian cyst. The gall bladder was removed, and the common duct drained after the removal of the stones with a Deaver T tube. The principal points of interest in this case are that: 1. The patient was a young woman—only 27. 2. She had always been treated during attacks, which she had had for years, for kidney colic. Evidently, she had had a marked pelvic inflammatory disease, which, I believe, was quite an important factor in the inflammatory condition of the biliary tract. 3. She had never been jaundiced, but jaundice is not always present in common bile duct stones. In fact, it is entirely absent in approximately 25% of common duct stones, being present in about 75% of all cases.

The next case which I am going to report illustrates some of the results of delay in surgery of the biliary tract.

In the presence of obesity and circulatory weakness in old patients with gall bladder empyema, the conservative treatment may be tried but cholecystostomy and removal of pus and stones under field block anesthesia is in the majority of cases the only way to salvation.

Case No. 26,969. Mr. E. H., age 71. Married, and has several grown sons and daughter. He was admitted to the hospital on October 24, 1932, with chills, fever, abdominal pain, and intense jaundice. The onset of the present attack was 8 days before coming to the hospital, when he was taken abruptly ill with intense pain in the epigastrium, accompanied by a chill and nausea. High fever followed with the pain remaining localized at the zypho-sternal juncture without radiation to the right shoulder or right angle of the scapula. The pain was of such severity that a doctor was called, who administered morphine. The attacks occurred daily, and the patient came to the hospital seeking relief. There had been a loss of 20 pounds in weight in the past 3 months. He had not been able to do much work on account of pain and feeling of fatigue and chilliness.

The patient's history states that for the past 38 years, he has had attacks of dyspepsia with epigastric pain relieved by vomiting. Ten years ago, he was jaundiced for several weeks. Said he had chills and fever due to malaria when a young man. In 1917, had what was diagnosed as "typhoid dysentery" for two weeks. He had had cardiac attacks since 1897. On admission to the hospital, in addition to gall bladder symptoms, there was a decompensating heart. This patient was given glucose and

subpectoral saline and digitalis daily. The jaundice gradually improved, as did the heart, and he was operated upon November 4, 1932, eleven days following his admission to the hospital.

Operation was performed under spinal anesthesia plus a field block. Made an upper right para-median incision. Upon opening the peritoneal cavity, found a mass of adhesions surrounding the gall bladder. The gall bladder was not visible due to these adhesions. Adhesions were freed and gall bladder was found to be much distended, with thick walls and dilated blood vessels. There was considerable hepatitis and enlarged cystic gland. The common duct was the size of the index finger, and there was found to be a stone about 1 cm. in diameter impacted at the ampulla. We were successful in milking this stone back into the common duct where it was removed. The common duct was drained with a Deaver T tube and the gall bladder was removed from below upward. The gall bladder itself contained 8 calcium oxalate stones.

This case illustrates some of the results of delay in surgery of the biliary tract. It was clearly evident that he had a common bilt duct stone 10 years ago, at which time he was jaundiced for several weeks. In 1897, which was 38 years ago, he commenced having heart attacks. These attacks were mostly palpitation with some dyspnea. It was hard for this patient to give a clear history as to exactly how long he had been suffering from these attacks of indigestion and dyspepsia. He gave an approximate length of time of 30 years. He also said he had had malaria when a young man. I believe that the cardiac attacks were secondary to the infection in the biliary tract. Then, consequently, we can date this back 30 years or more. He has been entirely free from all symptoms since his operation.

The first case, No. 26,817, illustrates nicely Courvoisier's law. This, I think, is a very valuable law, but it fails not infrequently. But on the other hand, its positive side is of great value. According to Courvoisier's law, a dilated and palpable gall bladder suggests that the jaundice is due to obstruction by malignancy at the head of the pancreas, or in the common duct below the point where the cystic duct enters the common duct. The other side is, that in the presence of jaundice, a contracted gall bladder, which obviously can be demonstrated only at operation, is indicative that the obstruction is due to stone in the common duct. In the first case, there was a small contracted gall bladder with the stones in the common duct, thus exemplifying Courvoisier's law, with the exception of the fact that there was no jaundice. In the second case, the law failed as there was a large dilated gall bladder with common bile duct stones.

The jaundiced patient is a very poor surgical risk, and when possible, we clear up the jaundice before operating. However, this cannot always be done, in which case, I believe we should operate, even in the presence of jaundice. And, many a time, a patient can be saved, in whom the condition is apparently hopeless.

The next case, No. 24,049, Mrs. H. U. L., white, age 57. Married. Has several children living and well. Admitted February 28, 1931. Deeply

jaundiced. Temperature normal. Her trouble had commenced 25 days previous to admission, with an attack of acute indigestion. On Wednesday, four days following the onset of illness, she became jaundiced, and since that time the jaundice had increased. Before being admitted to the hospital, she had been treated at home by intravenous glucose and intravenous calcium chloride. The glucose was continued following her admission to the hospital. She rapidly became worse and was almost in a state of cholemia when operation was decided upon. There was nothing of any significance on examination except extreme degree of jaundice and some tenderness in the upper right abdomen. According to the patient's daughter, she had had attacks of indigestion for the past five years, attacks usually coming on about once a month. Had lost considerable weight.

Operation was performed under field block. A pre-operative diagnosis of obstructive jaundice due to malignancy in the head of the pancreas was made. Made a Bevins gall bladder incision. Examination of the pancreas did not show it to be very much enlarged. The liver showed a marked hepatitis. The gall bladder was small, contracted, embedded in a mass of adhesions. The walls of the gall bladder were thick and gangrenous. Opened the gall bladder and evacuated about two ounces of very foul-smelling pus, and found a large stone impacted in the lower end of the cystic duct and encroaching on the common bile duct. The stone was removed and the gall bladder was drained.

Case Nos. 24,164 and 21,013. Mrs. M. P. B. Illustrates the importance of a two-stage operation on the biliary tract in old patients who are very poor surgical risks. We frequently have patients upon whom we can do a cholecystostomy for gall stones, whereas, if we were to perform a cholecystectomy and choledochotomy, the patient could not possibly survive the operation.

Mrs. M. B., age 76. Was admitted to the hospital on July 4, 1929 with chief complaint of upper abdominal pain and jaundice. Patient said that for the past 50 years she had had gall bladder symptoms with upper abdominal pains. When she was younger, she would have freedom from pain for a year at a time. Five months previous, she had an acute attack, and since that time she had not been free from characteristic symptoms of upper abdominal pain, and she had been intensely jaundiced. There were occasional attacks of chills and fever, associated with severe colicky pains. The heart was fibrillating. B. P. was 170/75. The icterus index was 27. There was a tumor mass present in the gall bladder region. The heart was digitalized. She was given calcium chloride intravenously daily and hypodermoclysis daily. Operation was performed on July 17, 1929, under field block anesthesia. Found a dense mass of adhesions in the gall bladder region. The colon and stomach were both adhered to the gall bladder. The gall bladder was opened at its fundus and found to be filled with stones. There was one large stone the size of a turkey egg and 12 other smaller ones. One was impacted in the mouth of the cystic duct and was removed with difficulty. There was a diverticulum of the gall bladder which con-

tained four large stones. Following removal of the stones, sutured a rubber tube drain in the gall bladder and a cigarette drain in the section beside the gall bladder and one in the foramen of Winslow, and closed the incision. This patient, who was 76 years of age at operation, had a bad heart and would not have stood any operative trauma to the bile duct. It was suspected at this time that she had stones in the duct. After the cholecystostomy she did nicely and drained bile freely. Drainage of bile continued until August 12, 1929. She was discharged from the hospital on August 14, 1929, at which time the wound was healed except for a small area at the site of drainage. Patient made an uneventful recovery, was free from jaundice, and much improved.

Eighteen months later, on September 27, 1931, she was again taken with repeated attacks of upper abdominal pain, chills, and fever. Attacks came on about once weekly. There was some jaundice but she was not as intensely jaundiced as upon previous admission. The attacks had been coming on for three weeks previous to admission. The icterus index was 10, and the van den Bergh showed an immediate direct reaction. Patient said that up until three weeks previous she had been doing nicely since previous operation. Heart was again fibrillating. B. P. was 156/85. Was given intravenous glucose and calcium chloride daily. Heart was digitalized. Operation, on March 17, 1931, was this time performed under spinal anesthesia. Adhesions were carefully divided, gall bladder isolated. It was found to be small and white, having almost obliterated itself. The common duct was easily found and packed with calculi. There was one stone at the ampulla the size of an English walnut. This stone was very soft, and in removing it, it was broken into several pieces. The duct was explored with the index finger. There were several stones in the common duct, and right and left hepatic ducts. These were removed by suction. The ducts were irrigated and several small stones removed. A probe was passed through the common bile duct sphincter into the duodenum, and a No. 30 T tube was introduced into the common bile duct. Bile was now coming through the tube freely, and the incision was closed with drainage. Patient convalesced nicely except for repeated attacks of cystitis.

As a stone in the common duct affects the biliary tree and produces mortality in so many of these cases, we should know when to open the common duct and when not to. In any patient who has been jaundiced, the common duct should be opened and explored. In any patient who has a contracted and thickened gall bladder, the common duct should be opened and explored. In every patient who has a dilated common duct, it should be opened and explored. If there is more than one stone in the gall bladder, I believe it is wise to open and explore the common duct. Reports from the Lahey Clinic are that in approximately 25% of the cases where there are stones in the gall bladder, there are also stones in the common bile duct. 39% of common duct stones have no jaundice. One in every four cases of gall stones have stones in the duct. The mortality rate is less, I believe, when you drain the duct than when you do not, as

you are draining the biliary tree. Both cases were operated upon in the most conservatvie manner possible. Mrs. L. had a very stormy convalescence. In about three months her jaundice cleared up completely and she is now well and strong.

Tumors of the head of the pancreas, both inflammatory and malignant, will often give the same general symptoms as common duct stones as exemplified in the following case report.

Case No. 23,900. Mrs. A. K., age 54. Was admitted to the hospital on December 22, 1930, with chief complaint of acute upper abdominal pain and jaundice. The onset of her present illness commenced five days previous to admission when she was taken with severe pain in the upper right abdominal quadrant while on her way to Florida from the State of Pennsylvania. Following the pain, she was nauseated and vomited. She also had chilly sensations along with the pain. She was relieved of her suffering with a hypodermic of morphine. She stated that since childhood she had been treated for bilious attacks and at times was treated for nausea and vomiting. Six months previous and again five months previous, she had had attacks similar to the present one, and was a patient in the Jefferson Hospital in Philadelphia where she was advised to have an operation for a stone in her duct. She had been troubled with indigestion for a long time and tried to avoid fats. It was necessary for her to remain on a diet constantly due to hyperglycemia. Physical examination was essentially negative except for severe jaundice and marked tenderness over the gall bladder region, and there were no palpable masses. Her van den Bergh showed immediate direct reaction. Icterus index was 15. She was given daily intravenous glucose hand hypodermoclysis. Operation was performed on January 3, 1931, under spinal anesthesia. The gall bladder was distended, pale and grayish-white in color. The blood vessels were congested. The walls of the gall bladder were very thick. There was considerable hepatitis, but no stones could be felt in the gall bladder. The pancreas was much enlarged and hard, a chronic interlobular pancreatitis, I believe. The common bile duct was opened and explored. No stones could be found in the common duct nor in the hepatic ducts. A probe was passed without much difficulty through the sphincter of Oddi into the duodenum. I believe this patient was suffering from a pancreatitis secondary to her cholecystitis. The common duct was drained with a T tube and the gall bladder was removed. The T tube was allowed to remain in place for two months. When last I heard of her, about one year ago, she was doing extremely well. Blood sugar was elevated before her operation, but has remained normal since. There was no sugar in the urine.

Malignancy of the pancreas or of one of the larger bile ducts is rarely a condition which is removable by operative procedure. Much relief for these patients from the intolerable itching and jaundice, however, can often be obtained by anastomosis of the gall bladder to the stomach or duodenum. When this operation has been successfully performed, the duration of the patient's life is perhaps slightly prolonged. In certain

rare instances, in which every evidence seems to point to the presence of an obstructive malignancy in the bile ducts, silent common duct stones will be found at operation. I have seen this in our operative experience, and also in the autopsy room. Almost every case of obstructive jaundice which appears to be due to malignancy should be explored before the patient is given up as a hopeless problem for whom no help is available.

Case No. 19,490. Mrs. N. R., age 58. Was admitted to the hospital on August 25, 1928, with chief complaint of pain in the upper right quadrant of the abdomen with a tumor mass in the upper abdomen of two months' duration, which patient thinks is her right kidney. She has been told that it is her right kidney. She had lost 20 pounds in weight during the previous three months. She was extremely jaundiced.

P. H. Eleven children living and well. Has had one miscarriage. Never any serious illness or operation. Said she had suffered from much gas, indigestion, and fullness after taking her food, et cetera, for many years. A cystoscopic examination showed both kidneys to be normal. Following the usual pre-operative treatment, operation was decided upon and performed, September 3, 1928, nine days following admission to the hospital. Made an incision in upper right abdominal quadrant, and found a large tense and adherent gall bladder, gall bladder being as large as a cocoanut. Gall bladder aspirated and a large quantity of colorless fluid found. Three large stones in the gall bladder. These were removed. Found a hard, indurated tumor mass, involving the common bile duct and extending up to the juncture of the common with the cystic duct. There were several nodules in the liver. The pancreas did not seem to be involved. Did a cholecysto-gastrostomy. I felt, in this case, that the cystic duct was probably not patent and the progress of the case following operation proved that the duct was not patent as the jaundice did not disappear. She was discharged from the hospital, however, three weeks following operation, improved but still jaundiced. I could not follow the case and did not know exactly how long she lived, but heard in a round-about way that she died about nine months after leaving the hospital and that she was still intensely jaundiced.

Case No. 17,403. Mr. W. C. G., age 45. Married. Was brought to the hospital February 8, 1927, with chief complaint of gall bladder trouble and jaundice. The trouble had commenced four months previous to admission to hospital with what he thought was acute indigestion. Much pain. Attacks would last for about six hours. There was considerable nausea but he could not vomit. Took considerable purgatives, and about three days following onset of trouble he noted that he was jaundiced. Then began to have fever. Jaundice lasted about two weeks and there was always an elevation in temperature. Jaundice cleared up in November, three months previous to admission. Two weeks previous he had acute pain in gall bladder region with fever and jaundice, and would occasionally have chills. There was loss of appetite, gas, and acolic stools.

Past History: Had never had typhoid. Pneumonia several times. Smallpox. Dengue fever four years previous. No history of cancer in family.

The gall bladder, following the Graham test, was never visualized. This patient was operated upon February 11, 1927, operation being performed under para-vertebral nerve block anesthesia. Found a much distended gall bladder, much adherent, and a marked hepatitis. After separating the adhesions, exposed the gall bladder. It was gangrenous and friable, and appeared to have perforated into the colon. There was considerable gray-brown foul pus. Found one very large stone in the gall bladder. The gall bladder was removed, and the common bile duct drained through the stump of the cystic duct. Patient did nicely. Drained bile freely. Left the hospital March 7, 1927 very much pleased with the operation. No jaundice when he was discharged. About six months later, he again became jaundiced, and had what he called bilious attacks. Was operated upon September 20, 1927, and it was found that the common duct was considerably inflamed and there were nodules in the region of the common duct and one nodule under the right side of the liver. One of these nodules was removed and proved to be adenocarcinoma. The primary lesion was probably in the common duct. I believe that this patient had a carcinoma of the gall bladder at the time we operated. Had we obtained pathological section of the gall bladder, we would have known, and our prognosis would have been different. I think we should always obtain specimen for pathological study in all cases, but especially in these cases with history of trouble over a long period of time.

Case No. 26,722. Mrs. G. H. R., age 62. Admitted to hospital August 6, 1932. Chief complaint was jaundice, loss of weight, abdominal tumor mass. She had been operated upon about 16 months previous at another hospital, a cholecystectomy being performed for relief of biliary colic and chronic dyspepsia, many stones being found in the gall bladder. The operation was very difficult due to adhesions. She said that she drained bile profusely for several weeks following this operation. She finally recovered, wound healed, but she lost considerable weight, probably due to loss of bile. Gained weight and felt well until December, nine months prior to her admission to this hospital when jaundice appeared abruptly, with acolic stools, but unaccompanied by any pain. The jaundice has varied in intensity, but has been present continuously ever since. Occasionally, there has been nausea and vomiting but as a rule, there is a desire to eat. Little abdominal pain present. Abdomen tender for months. About three months ago, patient noticed a mass on right side near costal margin which has been enlarging. Since noting this mass, there was considerable pain which required codeine and morphine for relief. There was some pruritus, but not enough to give her much trouble.

P. H.: Gastric discomforts for twenty years. Five children. No miscarriages.

Examination of abdomen revealed tumor mass definitely tender, in upper part of abdomen, extending downward beneath the umbilicus, dis-

appearing below costal margin and well over to the midline. The stools were acolic. R. B. C.—2,230,000. Hgb.—70%.

She was given daily intravenous glucose and hypodermoclysis. Two blood transfusions were given by direct method. She gained considerably in weight and strength. We decided to explore this tumor mass under field block anesthesia August 26, 1932, twenty days following admission to hospital. Pre-operative diagnosis: Extensive malignancy or some foreign body, such as a pack in peritoneal cavity. Incision was made about 6 cm. directly over most prominent part of tumor mass about four inches to right of and slightly below umbilicus. Upon opening peritoneum, found large cavity which contained about three quarts of bile-tinged fluid which microscopically showed bile and pus cells. Cavity extended from liver down to pelvis. Liver also much enlarged. Much necrotic material in the cavity. Closed incision with two rubber tube drains. Following evacuation of this cavity, Mrs. R. commenced draining bile profusely, dressing being changed frequently. There was never any bile in stools. She lost in weight and strength. The case being apparently hopeless, we allowed her children to carry her home September 16, 1932, and she died shortly thereafter. There was no autopsy.

DISCUSSION

Stricture of the bile ducts is always followed by jaundice. The jaundice may be intermittent or permanent, depending upon character of the stricture. While stricture may be the result of persistent obliterative cholangitis, most frequently it is due to operative injury. Hence, post-operative intermittent biliary obstruction is always more or less suggestive of stricture of common duct. A stricture that obstructs the common duct and causes retention of bile may lead to ulceration and perforation of duct on account of a diverticulum of common duct caused by obstruction in conjunction with weakness of the wall. It is well known that biliary obstruction following cholecystectomy, after which there is a history of profuse output of bile over a more or less long period of time is suggestive of a stricture of the common duct or hepatic duct.

Stricture of the duct will often give a clinical picture closely resembling that of stone. In this case, there was a profuse discharge of bile following operation. This history was obtained from patient and daughter who both said there was profuse discharge of bile for several weeks, which suddenly ceased, and she was in fairly good health for a period of about six months, when she suddenly became jaundiced, and this jaundice was not associated with pain. Three months following onset of this jaundice, a mass developed which was tender and progressively enlarged. She was brought to hospital intensely jaundiced with acolic stools, et cetera. It was thought that mass might possibly be due to hydronephrosis with pressure on duct causing jaundice. It was also thought that it might be a pack present and causing pressure on duct. At operation, mass proved to be a tremendous abscess contained bile-tinged fluid and considerable necrotic material and

pus cells. Evidently, she had a common bile duct stricture which ulcerated and perforated.

In conclusion, it may be said (1) that delay in operating in stone in the common duct invariably leads to serious damage to the pancreas and liver; (2) In surgery of the bile ducts, we believe that obstruction should be considered as the cause of the symptoms and the reason for early surgery and that all jaundice should be considered as obstructive in origin until proved otherwise. (3) Diseases of the common bile duct usually represent complications of diseases of the gall bladder and therefore are preventable by timely surgery. In three of these cases which I have reported, the gall stone disease had been present for fifty, thirty-eight, and four years respectively, causing many severe attacks of colic. They were neglected cases and had an early operation been performed, we would no doubt have had better results.

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SPLENECTOMY FOR BANTI'S DISEASE

By H. A. Royster, M.D., H. B. Haywood, M.D., Raleigh, and W. G. Wilson, M.D., Smithfield

This record of a single case may be justified upon the ground that it presents features of more than ordinary interest. The incidence of splenomegaly, with or without changes in the normal blood picture, and in particular the various types classified under the term, splenic anemia, is by no means extremely rare. And yet such cases are important enough, we believe, to be reported, especially those which are amenable to surgical relief. Here is the account of our case:

History: H. V. F., Jr., age 40, married. For ten years he has suffered from arthritis of the deforming type, hypertrophic, multiarticular, and migratory. He was treated in a veterans' hospital with some improvement. Except for this disability he has been in his usual health until the onset

of the present illness about the middle of December, 1933, when he began to complain of abdominal distress, anorexia and general weakness. He has passed small amounts of bright red blood from the anus on several occasions, usually when his bowels were loose. He was seen first by his physician on February 12, 1934. A month before that he had been admitted to a hospital elsewhere and remained for about three weeks. He was told that the diagnosis was in doubt, but that he should return for exploratory operation if he did not improve in a month. His idea was that the operation was to be done to determine the cause of the mucus and blood in his stools. His habits have been abstenious and there is nothing in his family history that seems to have any bearing on his case. His physician (W. G. W.), who furnished the above data, discovered the most striking findings to be great enlargement of both the liver and the spleen, the former being the width of the hand below the costal margin and the latter three fingers' breadths below it. The patient's blood pressure was 90/70; the urine was normal and the blood picture as follows: Hgb. 80%; r. b. c. 4,500,000; w. b. c. 12,000; p. n. 62%, s. m. 24%, l. m. 9%, eosin 5%. It was suggested that the diagnosis lay between Banti's disease, portal cirrhosis and a hepatitis due to antirheumatic drugs.

Consultation: The patient was referred for consultation and was seen by two of us, (H. A. R. and H. B. H.) on February 16, 1934. The findings previously noted were confirmed and in addition it was observed that the patient was emaciated, had two small hemorrhoids (not painful), and that his temperature was 103°. In view of the blood examination and the absence of ascites the medical consultant (H. B. H.) inclined to splenic anemia (Banti) and recommended stool examination, Wasserman test and the removal of five remaining infected teeth before giving a final opinion. There was also noticed a very tender area in the left lumbar region which was obscured by the splenic enlargement and at the time no special attention was paid to it. The patient returned home, had the teeth extracted, and was admitted to the hospital on March 6, 1934.

A few days of further study revealed slight bilateral cervical adenopathy, no material change in the blood picture, negative reports on stools, and negative Wasserman reaction, both blood and spinal. The teeth had all been removed. Upon further consultation it was agreed that operation for removal of the spleen offered the patient the only hope for relief.

Operation, March 10, 1934. Splenectomy. (H. A. R.): Through a high left rectus incision of the double curved type (Bevan) the spleen was exposed and found to be densely adherent, in front to the colon and posteriorly to the chest wall. It was gradually lifted until the pedicle was in sight; this was clamped and tied in sections with chromic gut ligatures. A small amount of blood was lost from arterial branches which were spread out over the adhesion areas. The tail of the pancreas was kept in view and care was exercised not to injure it. Below the spleen there was a retroperitoneal mass, oblong in shape, semifluctuating, extending downward from the lower pole of the kidney to the pelvic brim. The left kidney

appeared normal in shape and size. (Of the nature of the retroperitoneal mass we were not at the time sure.)

Progress Record. The patient's immediate post-operative course, allowing for some hours of expected shock, was comfortable and satisfactory. Three days after operation the left lumbar swelling increased in size, became distinctly fluctuating and very tender. The leucocyte count rose to 20,000. Aspiration yielded six ounces of thick pus, showing staphylococci. A second aspiration a few days later obtained a smaller amount of pus and healing was rapid. (Undoubtedly this abscess corresponded to the tender area in the left lumbar region which was present at our original examination and also was the actual mass felt behind the peritoneum at the operation. In our opinion it was metastatic in origin, resulting from long years of absorption from infected teeth which also in turn may have been the casual factor in the arthritis. Certainly it seems to have had no connection with the splenic disease).

Another complication arose two weeks following the operation (March 24). The patient suffered intense pain in his left chest and the temperature began to rise until within six days it had reached 103°F., which point was held for three days. The diagnosis was diaphragmatic pleurisy; there was no effusion. During this period the patient looked—and was—extremely ill. The mucous membranes of his nose, mouth and tongue were red and he complained constantly of their dryness. Under appropriate treatment, including two blood transfusions, he began to improve in a week's time and was discharged from the hospital April 16, 1934, 37 days after operation.

Pathological Report. The report of the pathologist: "The spleen is nearly ten times the normal size; it is soft and uniform throughout. There is considerable hemorrhage through the section. The splenic nodules are indistinct. The center of a good many of them shows fibrosis. The blood spaces are wide open and prominent, with moderate fibrosis between the blood channels. Pathological diagnosis, Banti's disease."

Convalescence. At home the patient was attended by his physician (W. G. W.), who continued a preparation of splenic extract, which he had begun to take ten days before leaving the hospital, along with proper diet and rest. He reported for examination on June 8, 1934, showing a gain of fifteen pounds in weight, a good color and apparent freedom from his "rheumatism." Since then he has been seen by us at various times and has been constantly under the watchful care of his medical attendant, who reported his blood count on January 11, 1935, as follows: Hgb. 90%, r. b. c. 6,770,000, w. b. c. 15,000, an evident approach to a polycythemia.

Follow-up Report. Mr. F. reported May 6, 1935, that his weight is now 140 pounds, a gain of 25 pounds since the operation. He is ruddy and active. His liver is about normal in size. The arthritis has disappeared, although he feels occasionally fleeting pains in his arms and shoulders. To all intents and purposes he considers himself restored to his previous good

health. His blood count is as follows: Hgb. 98%, r. b. c. 250,000, w. b. c. 12,000; polys. 10%, s. m. 70%, l. m. 3%, eos. 16%, bas. 1%. The deficiency in the polymorphonuclear count and the excessive eosinophilia are matters for future consideration.

Comment. (H. B. H.). This relatively young man was a picture of distress. He showed an arthritis of ten years' standing, pain in the left hip, emaciation and general weakness, great enlargement of the liver and spleen, mucus in the stools, rectal bleeding, high fever, leucocytosis of 12,000, scleral jaundice, infected teeth and gums, a tender retro-peritoneal mass extending from the region of the left kidney down to the pelvic brim, bilateral cervical anterior chain lymph-node enlargement, no ascites.

The duration of the present illness was one year. The infected teeth being removed and the acute splenic tumor of infectious diseases being ruled out by the proper tests, it was necessary to eliminate syphilis, tuberculosis, malaria, tumor, cysts, blood dyscrasias, amyloid and cirrhotic splenomegaly, with the latter's relationship to liver cirrhosis. This was done. The leucocytosis was due to infection.

Banti's disease is usually seen in the comparatively young and runs a fatal course of several years' time with death from infection or hemorrhage. It is divided into three stages: anemic or pre-ascitic; intermediary; cirrhotic with occasional jaundice, followed by increased anemia, emaciation, exhaustion, fever and cardio-renal changes.

The diagnosis must be made by exclusion, considering the age of the patient, the leucopenia and the chronicity. It is to be differentiated from Gaucher's disease, which shows a very large spleen with early anemia; from Hanot's cirrhosis, which is associated with jaundice, greater splenomegaly, abdominal crises and leucocytosis; from pernicious anemia, the aleukemic stage of leukemia, Hodgkins' disease and hemolytic jaundice.

Banti's disease, beginning primarily in the spleen, is caused by a toxin of unknown origin which gains entrance to the spleen by the splenic artery, and causes a splenomegaly with increased destruction of red blood cells and later by cirrhotic changes in the liver with ascites and jaundice. The marked histologic feature is a fibrosis of the spleen beginning around the central artery and radiating through the parenchyma, involving the trabeculae and the capsule. Along with this there may be thrombosis with thickening of the splenic vein. The fact that phagocytosis of cell debris or even of whole cells, takes place not only in the spleen, but in other parts of the reticulo-endothelial system, explains the rapid accommodation that takes place after splenectomy. Removal of the spleen, therefore, is the logical step in this disease.

Surgical Considerations. (H. A. R.). The surgical importance of splenic anemia, or Banti's disease, centers in the fact that it is curable by splenectomy. Under the term splenic anemia, which was first used by Grissinger in 1866 when he described the disease, are included numerous conditions, clinically somewhat similar, but undoubtedly different in their origin and pathology.

In 1883 Banti studied the affection carefully in all its aspects, brought out uniform pathologic findings, and described a clinical syndrome, which has stood the test of experience. Generally the two terms, splenic anemia and Banti's disease are regarded as synonymous, but some authors condemn the one or the other. Boyd says splenic anemia is undesirable, for "it is a rubbish heap from which various distinct entities have by degrees been rescued"; while Pool and Stillman decide that the name Banti's disease "should not be used" because "Banti described a particular pathologic picture." For our purpose in the instant case Banti's disease suffices, as anemia was not a distinct factor. It rarely appears early and in most cases is not severe. It is regarded by some as a secondary type due to the hemorrhages, but this would not account for the anemia in cases showing no hemorrhage.

The origin of Banti's disease being unknown, it is universally admitted that "when an etiologic factor is demonstrated the case is removed from the group of splenic anemias." (Moynihan) More expressive is W. J. Mayo's remark: "Incomplete knowledge is essential to the diagnosis. If we know the cause of splenic anemia, it is not splenic anemia." The one thing for the surgeon to consider is that, granted the diagnosis of Banti's disease is made, splenectomy is indicated and, of course, the earlier the better. By elimination this disease must be differentiated from other conditions involving the spleen and blood-making organs, many of which are not responsive to splenectomy. Although the operative mortality has varied from 10% to 25% (reduced in the past eight years to 5%) and in spite of the fact that permanent cures are not effected in a few cases, especially of the advanced types, still the only hope for successful issue is removal of the spleen before the destructive processes shall have supervened.

PERITONEAL ADHESIONS: THEIR SURGICAL SIGNIFICANCE

By R. B. McKnight, M. D., Charlotte, N. C.

Definite progress in surgery would be made if those desirous of doing surgery were required to have their capabilities confirmed by a rigid examination on the development, anatomy and anomalies of the normal peritoneum. Such knowledge on the part of the surgeon is necessary before he can aspire to do the best type of surgery in the abdomen. He must know that a section of bowel when pulled on is frequently going to form a band or a so-called "kink" in its mesentery, and when the tension is released the bowel falls back in place and the "kink" is gone. This is certainly not an adhesion. He should also know that certain folds or bands of peritoneum which do not conform to a text book picture, are merely anomalies, are most likely normal to the particular individual who has his abdomen opened, and do not cause alteration in normal function. His viscus has adapted itself to this environment, and meddlesome interference may lead to real dysfunction following operation. Failure of the operator to recognize the condition may cause him to overlook the real pathologic

change on which is based the patient's complaint, in addition to converting a normal anomaly into a distinctly abnormal one. So in considering the question of abdominal adhesions, it is imperative that some attention should be given to certain anomalous developments of the peritoneum resulting in such folds and bands, frequently interpreted as "definite evidence of disease in the past."

Perhaps the ileocecal and appendix regions have been the site of more unwarranted surgical attacks than any other portion of the abdomen. The peritoneum in this area is frequently subjected to various folds and bands resulting in fixation of the cecum, terminal ileum or ascending colon, or in curling and folding of the appendix or distortion of its mesentery. I am in full agreement with Royster in his statement that "once appendicitis, always appendicitis"; and I also agree with Hertzler that such anomalies usually cause no trouble and should not be mistaken for evidence of past inflammation. Herein, I think, lies the answer to the bitter attacks so often made, especially by the internists, on the subject of chronic appendicitis. Chronic appendicitis does exist, and when such an appendix is taken out, the patient is improved; but, when a normal anomaly is subjected to distortion, and a healthy appendix removed, then the patient still has his same complaints, or is distinctly worse! In other portions of the abdomen are not infrequently found various peritoneal ligaments and bands not pictured in our anatomy texts. In the right upper quadrant the cysto-duodenal, hepato-duodenal and hepato-colic ligaments may become obvious and prominent only when the liver is lifted up. These seldom furnish any symptoms at all, and in the presence of a normal gall bladder, a sharp edged liver with no streaks of hepatitis, one is certainly not justified in assuming evidence of trouble in the past and making an operative diagnosis of chronic cholecystitis. He must look elsewhere for the offending lesion and not destroy what is a normal condition of the peritoneum for that particular individual.

The subject of peritoneal adhesions is, indeed, a live topic, and the literature of many decades past up to the present time teems with various dissertations on their cause, symptoms, prevention and treatment. I am convinced that Hertzler's conception of this subject comes nearer to the actual facts than any treatise I have seen, and believe that to date there is little to be added to his splendid monograph on Surgical Pathology of the Peritoneum. My remarks are based largely on his viewpoint and I shall quote him extensively, and in doing so I do not plagiarize.

Let us approach the question of peritoneal adhesions with the hypothesis that all pathologic processes are defensive reactions on the part of Nature, and that "adhesions" are no exception. If this be true, then it follows that such adhesions are not inimical to the welfare of the patient, but, indeed, are purposive, and seldom contribute to untoward symptoms unless there is actual obstruction to the flow of the fecal current.

All wounds heal by what we call first or second intention, and that applies to skin, bone, muscle or any other kind of tissue. It has been

shown experimentally that "any mechanical factor which so injures the endothelial layer of the peritoneum as to permit the escape of a coagulable exudate, will lead to adhesions with some adjacent peritoneal surface. If the exudate forms fibrillar fibrin, the adhesion will be permanent; if the fibrin be granular the adhesion will be temporary." This is entirely consistent with the histology of first and second intention healing respectively, so that the two types of adhesions, permanent and temporary, are histologically comparable to first and second intention healing. Such a classification of adhesions is cytologically sound.

A permanent adhesion is union by first intention and is formed for the explicit purpose of a permanent repair of an injury; it is not necessarily a condition to be prevented, but is one to be controlled.

Any trauma sufficient to break the continuity of the peritoneum's endothelium may produce a permanent adhesion. It follows, then, that the surgeon is usually the chief instigator. By everting the edges of the peritoneum into the wound, taking care that no gaps are left, peritonealizing raw surfaces and perhaps by using amniotic fluid or certain digestive ferments intra-abdominally, the formation of such adhesions can be controlled. The same careful technic must be observed in operating on hollow viscera. External trauma insufficient to break the skin may cause sufficient laceration of the peritoneum, either parietal or visceral, or both. to cause permanent adhesions to form. Those resulting from disease are always a beneficient process, although nature in attempting such repair may overdo it. A subacutely perforating peptic ulcer approaching the visceral peritoneum produces an exudate on this surface which attracts a nearby peritoneal surface, and a permanent adhesion is the result. Any irritation of the peritoneum brought about by a needle puncture, suture tension, disease of hollow or parenchymatous organs, infections by fibrin producing organisms as the gonococcus, chemical trauma, etc., may lead to permanent adhesions. These adhesions rarely give untoward clinical symptoms. How many patients have you seen relieved of their symptoms following the rather ridiculous operation of lysis of adhesions, excepting, perhaps, those rare cases with an actual intestinal obstruction due to a loop of bowel becoming imprisoned under an adhesive band?

In differentiating between unusual peritoneal folds and permanent adhesions it is necessary that the position be identified as one that could not be effected by a peritoneal fold. "Adhesions" about the gall bladder that do not involve the omentum are generally not adhesions at all, but are unusual peritoneal folds. If omentum is involved, then they are likely true adhesions, the result of an old cholecystitis. If such a gallbladder requires removal, it should be done with as little disturbance to the surrounding adhesions as possible. It is probable that permanent adhesions about the appendix are unusual, and when they do occur, they most likely follow an appendiceal abscess. Subsequent to such a condition coils of intestine may become permanently united at the seat of infection, and of

the relative few instances of intestinal obstruction due to such adhesions, it is most likely to occur here.

Unless a permanent adhesion is doing actual harm, it should be left undisturbed. "Breaking up of adhesions" is pernicious surgery. Surfaces are left which cannot be covered by peritoneum and new attachments will most likely form which leave the patient in a far worse condition than he was at first. We cannot often improve Nature's defenses.

Temporary peritoneal adhesions are exactly what the name implies. In the presence of inflammation, they quickly form and stand guard while healing is taking place and when the inflammation subsides, they loosen and free the viscus to which they were attached. Their purpose is to limit the spread of infection, and when their mission is fulfilled they disappear. Adhesions resulting from infections are temporary (those from the gonococcus frequently excepted), and if left alone they will loosen without interference on the part of the surgeon.

The role of the omentum in the formation of temporary adhesions in combatting the spread of bacterial infections is indeed important. Its migratory power is well known to any experienced abdominal surgeon, but it is also significant that any peritoneal surface can and does play sometimes just as important part in walling off infectious processes. How often have we seen omentum, coils of intestine and abdominal wall all plastered together forming a most efficient barrier about an appendiceal abscess! The management of such an abscess may be a mooted question, but regardless of how this is done, the fact remains that such a defensive barrier should be molested as little as possible. I do not quite agree with Hertzler that it is dangerous to open into such an abscess. In a series of 38 consecutive appendiceal abscesses, I deliberately opened into them, drained by suction as thoroughly as possible and flushed out the cavities with repeated ether washings. All the patients in this series recovered promptly and with the same smooth convalescence of the uncomplicated cases, whereas a contrast with a colleague's series of appendiceal abscess in which ether was not used showed the latter series had a stormy convalescence and several deaths. Of course, the technic must be extremely careful as such adhesions are quite friable and loosely attached; they should be disturbed as little as possible, and Hertzler is eternally right when he says it is the "breaking up of such adhesions" that brings so much joy to many amateur operators!

Usually such adhesions disappear in two to four months. The fibrin is granular and fibrillar fibrin leading to permanent adhesions is generally prevented from forming by action of bacterial toxins.

"The best policy for dealing with a temporary adhesion may be summed up briefly as follows: If you are not certain that it is an adhesion about an inflamed area, leave it alone; nature will release it in her own good time—much more gently than the surgeon can.

"One may say almost without reserve that the only mischievous adhesions are man-made, the residuals of preceding operations. These can be

cut and severed edges covered with normal peritoneal surfaces. Rarely are such adhesions caused by disease, particularly in the pelvis; about the gall bladder they may infrequently cause trouble. 'Breaking up of adhesions' is a pernicious practice. Before the surgeon dares to lay hands on them, he must know why they formed and what the consequences will be if they are severed. It is the stupid interference with these protecting forces of Nature that has increased mortality from operations for acute appendicitis."

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SPINAL ANESTHESIA

Report of 2,122 Cases from the Surgical Services of Watts Hospital

By Dr. Charles Durham Haywood, Durham, N. C.

This paper is presented as a clinical summary of 2,122 spinal anesthetics from the Surgical Services of the Watts Hospital, Durham, N. C., for the period from October 24, 1928, when the first spinal anesthetic in this hospital was given through December 31, 1934. These are consecutive cases and include all of our spinal anesthetics given up to January 1, 1935.

The literature of the past few years has contained numerous articles on this subject. Their conclusions are confusing. Some writers would have us use spinal anesthesia routinely; others are equally opposed to its use under any circumstances. The truth in my opinion lies between these two extremes. Dr. Wayne Babcock, in an article entitled, "Spinal Anesthesia in Fact and Fancy,"[1] sums up the present status of spinal anesthesia in excellent fashion, drawing attention to the many conflicting reports of clinical, and experimental work; showing up their illogical as well as logical conclusions.

My excuse for reading this paper is to add to the number of clinical reports that eventually when many thousands of carefully studied and reported cases have been tabulated a true prospective of spinal anesthesia may be had and its place in the field of anesthetics definitely established. I shall not, at this time, review the history of spinal anesthesia since its introduction by Corning in 1885, or discuss the physiological principles involved, as I have done so in a previous paper in *Southern Medicine and Surgery,* July, 1932.[2] I shall, however, briefly review our technique, as our methods of giving the anesthetics and principles upon which we proceed are essential to an understanding of the clinical reports to follow.

TECHNIQUE

I. *General Principles:* In April, 1930, Lundy[3] stressed the importance of the following factors in controlling the height of the anesthesia:

1. The dose,
2. The dilution,
3. The point of injection, and
4. The speed of injection.

When to these factors are added:

5. The Trendelenberg position, (stressed by Labat[4]), and
6. Ephedrine before induction (introduced by Ockerblad and Dillon[5])

we have the cardinal principles by which we proceed.

II. *Selection of Drugs:* Our choice of the drugs available is U. S. P. procaine (i.e., novocaine or neocaine) crystals, dissolved in the patient's own fluid, because:

1. A minimum of foreign material is introduced.
2. Procaine is relatively non-toxic in the doses employed, with a very large margin of safety.
3. The crystals do not deteriorate.
4. It is more easily controlled as to height of anesthesia and corresponding fall in blood pressure, than the other drugs we have tried.
5. Its action is more rapid and positive than the other drugs.

We used spinocaine in 109 of our early cases, but were not impressed by its reliability or ease of control as claimed by Pitkin.[6] Since then we have used chiefly novocaine and neocaine brands of procaine hydrochloride. Pantocaine, a newer drug (preferred by Marvin of the Boston City Hospital[7]), gives a slightly longer action than novocaine. Usually 1½ to 2 hours, as contrasted with 50 to 60 minutes for procaine. Pantocaine is, however, slower in action (15 to 20 minutes instead of 5 minutes for procaine). Its action is also less reliable in our experience. In our long operations we use a combination of procaine and pantocaine, thus obtaining the advantages of both drugs. The latter drug is ten times as strong as procaine and 10 mgs. equals 100 mgs. of procaine. The Lahey Clinic of Boston is now using metycaine[8] successfully. We have used nupercaine, a quinine derivative, only a few times. It has been used successfully by Arnheim and Mage at Mt. Sinai Hospital in New York City.[9] The diversification of drugs used is ample evidence that the ideal drug has not yet been found. But for the present procaine hydrochloride seems to be the universal favorite.

III. *Dosage and Volume:* For operation on the perineum or rectum we use 50 to 75 mgs. of novocaine crystals dissolved in 1 to 1½ c.c. of the patient's spinal fluid. This amount is also suitable for a cystoscopy. For operations on the genitalia or trans-urethral resections we use 100 mgs. in 2 c.c. With these doses no preliminary ephedrine is necessary. For

lower abdominal operations and hernias we use 120 to 150 mgs. in 2 to 3 c.c. For upper abdominal and renal operations we use 150 to 200 mgs. in 3 to 4 c.c. In each instance we use the larger doses for the large, heavy individuals who are in good condition; and the lesser doses for the small thin patients, and patients who are poor risks.

IV. *Pre-operative Medication:* Those patients who are inclined to be nervous are given hypnotics the night before the operation. Barbital preparations are usually chosen. Some few patients have their Barbital repeated on awakening in the morning, especially if the operation is posted late in the morning. Nearly all patients are given a hypodermic from ½ to 1 hour before the operation. This usually consists of morphine sulphate, grains 1/6, and atropine sulphate grains 1/150. Some patients are given pantopon instead of morphine, and some scopolamin instead of atropin. There does not appear to be any advantage in the use of pantopon as compared with morphine, and it is more expensive. We now give ephedrine in 1% novocaine solution hypodermically at the site of the lumbar puncture almost routinely. The dose is usually 50 mgs. but this is lowered if the patient has a hypertension.

V. *Care of Patient During Operation:* We consider psychic management as essential in spinal anesthesia and the anesthetists endeavor to keep the patient calm and entertained if they are inclined to be talkative. The blood pressure, pulse and respiration are taken and recorded every 5 minutes on a graphic chart. We use a special anesthesia sheet, an example of which is appended. Too much stress cannot be laid upon the keeping of accurate records in order that the anesthetic and complications may be carefully evaluated at a later date. Also accurate records stimulate the interest of the anesthetist and one cannot help but learn much from accurate records and statistics that clinical impressions would never teach one.[10] Should the fall in blood pressure be alarming through poor technique from giving too high an anesthetic or the patient be unusually susceptible, we have found stimulation with repeated small doses of adrenalin and one large does of caffeine-sodium-benzoate to cause immediate response in most cases. If a dangerous level is reached (i.e., a 50% drop of blood pressure or more) intravenous treatment is begun and transfusion resorted to if necessary. Morphia, heat, and the Trendelenberg position, are of course used to combat shock. Respiratory failure is treated by supporting the blood pressure as above and artificial respiration until the effect of the anesthetic is worn off. A Drinker respirator might be used if available. We have been fortunate in not having any respiratory failures.

VI. *Administration of Anesthetics:* All of our anesthetics have been administered with the patient lying on the side on which the operation is to be performed. The table is level, the patient is instructed to draw up his knees and flex the head on the chest, approximating the knees and chin as closely as possible. The skin of the back is then prepared with iodine and alcohol or Scotts Sol. and a lumbar puncture made with a fine

spinal anesthesia needle (23 gauge) in the third or fourth lumbar interspace, directly in the mid-line. Spinal fluid is then withdrawn by gentle suction, novocaine crystals dissolved in the volume chosen and re-injected as slowly as possible without barbitage. The needle is immediately withdrawn, the patient turned on his back or position suitable for the operation and the head of the table lowered about 15 degrees. If the anesthetic does not rise high enough, the table is lowered still further until the anesthetic reaches the desired level. After 15 minutes the anesthetic is "fixed" by the nervous tissue, and further rise does not occur. The patient may then be placed in any position the surgeon desires, the condition of the patient being taken into consideration.

I shall discuss our clinical observations and results under the following heads:

1. Classes of Cases
2. Age and Sex
3. General Condition of the Patients
4. Drugs Used
5. Volume Used
6. The Site of Injection Chosen
7. Pre-operative Medication.
8. Duration of Anesthesias and Operations
9. B. P. and Pulse Studies
10. Additional Anesthesia
11. Operative Complications
12. Post-operative Complication
13. Mortality Statistics.

I. *Classes of Cases:* The 2,122 cases for which spinal anesthesia was employed were divided as follows:

1. Operations on the gastro-intestinal tract—1,033
2. Gynecological—465
3. Urological—304
4. Operations on lower extremities and miscellaneous operations—320

See Table I for details.

II. *Age and Sex:* The sexes were about equally divided, there being a slight preponderance of females over males. Females constituting 55% and the males 45%. See Table 2 for details.

The youngest patient was eleven and the oldest eighty-six. The majority of the patients were in the second, third, fourth, and fifth decades. The majority about 50%, 3rd decade. See Table 2 for details.

TABLE I Classification of 2,122 Operations Done Under Spinal Anesthesic

1. Gastro-Intestinal Operations

Appendectomies	749
App. c drainage	9
Cholecystetmoies	85
Cholecystotomies	10
Choledoctotomies	2
Suture perforated ulcer	12
Pyloroplasty	1
Gastro-enterostomy	7
Entro-enterostomy	4
Resection Intest.	5
Cerostomy	18
Enterostomy	9
Reduction of Volvus	1
Resect. Rectum	1
Hemorrhoidectomy	79
Fist. in Ano. Resect.	22
I. & D. Ischio-Rectal Abscess	6
Suture Perf. Intest.	5
Repair of Fecal Fist.	1
Resect. Cecum	2
Removal Gall Stone from Jeounum	1
Radium to Ca. of rectum	1
Cecum-Signoid anastomosis	1
Miculicz	1
Exc. Omental Tumor	1
Dil. Rectum & exam.	1
Total	1033
Minors	108
Majors	925
Total Majors	1838

2. Gynecological Ops.

	Sub Total
Hysterectomies	159
Complete Hysterect	6
Suspension of Uternus	90
Salpinjectomy	67
Perineorrhaphy	29
D & C	33
Caut. of Cervix	12
Trachelorrhaphy	1
Oopharectomy	3
Vag. Hysterectomy	1
Myomectomy	1
Caesarian	13
Ovariancystect	12
Radium to Uterus	4
Therapeutic abortion	3
Partial resection Sacrome Uterus	1
Rupt'd. Ectopics	2
Bart. Cystect	3
I. & D. Pelvic Abscess	1
Exc. Vag. Tumor	1
Watkins-Wertheim	6
I. & D. Perineal Abscess	2
Biopsy Cervix	2
Partial Resection Tubes	1
Ligation of Tubes	1
Resect. Vag. Cyst.	1
	465
	75
	390

3. Genitro-Urinary Ops.

Prostatectomy	75
Prostatic Resection	35
Cystotomy	37
Nephrostomy	12
Nephrectomy	23
Nephrolithotomy	12
Ureterotomy	9
Uretorolithotomy	18
Uretrolysis	2
Orchidectomy	7
Epididymectomy	6
Epididymotomy	15
Caut. Prostate	3
Caut. Bladder	4
Radium Bladder & prostate	3
Fulguration Urethea	1
Transplant. Ureters	1
Catheterization	1
Uretheral dilatation	1
Cautery Punch Resect.	1
Fulg. Uretheral Caruncle	1
Amp. Penis Ca.	1
Repair Uretheral Diverticulum	1
I. & D. Inguinal Adenitis	2
Dosal Slit Prepuce	2
I. & D. Peri-Renal Abscess	2
Removal Bladder Diverticulum	1
Repair Uretheral Fist.	
Hydrocelectomy	5
Bladder Stone Crushed	1
Cystolithotomy	1
Varicocelectomy	2
Biopsy Bladder Tumor	2
Cystoscopy	3
Exc. Bladder Sinus	1
Expl. Kidney	4
Repair Hypospodius	1
Plastic on Urethera	1
Caut. Chaneroid	3
Ligation Ureter	1
Circumcision	1
Total	320
Minors	46
Majors	274

4. Ops. on Lower Extremities and Miscellaneous

Herniotomies	158
Strang. Herniotomies	3
Fem. Herniotomies	4
Abd. Herniotomies	9
Release Abd. Adhesion	34
Pilonidal Cystect	7
Exploratory Lap.	16
Exc. Tumor Ext.	5
Amputations	6
Closed reductions	10
Open reductions	10
Inc. & D. Abscess	2
Exc. Varicose Veins	2
Exc. Abd. Scar	1
Lig. Fem. Art.	1
I. & D. Ing. Adenitis	2
Stretching Contractures	3
Expl. Abd. Sinus	1
Skin Graft	2
I. & D. Abd. Abscess	1
Ostectomy	1
Splemectomy	1
Debridement	2
Sequestectomy	3
I. & D. Osteomyelitis	2
Red. Disl. Hip	3
Lipectomy	1
Exc. Lymph Glands	1
Repair lacerated male perineum	2
Repair perf. abd. wall	2
Vag. drain pelvic abscess	1
I. & D. Umbilical abscess	1
I. & D. Abs. abd. wall	1
Repair Poplitcal nerve	1
Exc. Bilat. Bunions	1
Removal Semilunar Cart.	1
	304
	55
	249

TABLE II

Age and Sex Distribution in 455 of the first 500 to whom Spinal was given:

	Males		*Females*	
	No.	%	*No.*	%
1-10	0	0%	0	0%
11-20	34	16.7%	24	9.6%
21-30	60	29.7%	95	37.5%
31-40	31	15.3%	59	23.3%
41-50	27	13.3%	45	17.7%
51-60	25	12.3%	17	6.7%
61-70	20	9.9%	11	4.7%
71-80	5	2.4%	1	0.39%
81-90	0	0%	1	0.39%
	202		253	
Percentage.....	45%		55%	

Children under ten were not given spinal anesthesia chiefly because of the fact of fear, due to their inability to comprehend what was being done. Age in itself is no contra-indication. The doses for the very old and very young were slightly less than for those of middle age. The size and weight of the patient were taken into consideration along with the age in determining the dose.

III. *General Condition:* The general condition was described as being good in 293 of the first 500 patients, fair in 96, and poor in 11, and was not mentioned in 100. Three of those reported as fair were pregnant. These numbers give the following percentages: good 73%, fair 24%, and poor 3%.

The condition of the heart was specified to be normal in 376 or 90% and diseased in 40 or 10% of 416 patients of the first 500 cases. The lungs were said to be normal in 423 or 97% and diseased in 15 or 3% in 438 patients of the first 500 cases.

The urine was examined in 413 of the first 500 cases and showed evidence of infection in 87 or 21%, of nephritis in 28 or 7%, and sugar in 25 or 6%.

The B. P. of the first 500 cases, on admission to the hospital, averaged, systolic 116 mm. Hg., diastolic 60 mm. Hg. The details of the B. P. studies are considered in a subsequent paragraph.

IV. *Drugs Used:* In the first 500 spinal anesthesias given, spinocaine was used 109 times and novocaine 385 times. In six cases the drug used was not specified. These figures give percentages of novocaine 80%, spinocaine 20%. Since the first 500 cases spinocaine has not been used for reasons given under Selection of the Drug under the heading of technique above. Spinocaine comes in ampules of 2 c.c. containing 200 mgs. of novocaine along with other ingredients which are supposed to make the anesthetic safer. In most instances where spinocaine was used one 2 c.c. ampule was given. The novocaine doses were divided as follows in 290 of the first 500 cases: 50 mgs. in one case; 100 mgs. in 43 cases or 14.5%; 125 mgs. in 23 or 8%; 150 mgs. in 146 or 50%; 175 mgs. in 39 or 13%;

2 mgs. in 38 or 13%. The most common dosage employed is thus seen to have been 150 mgs. Since the first 500 cases there have been a great many more cases where a small dose of 50 to 75 mgs. were used as spinal has been used more often for less serious operations, as rectal and genito-urinary operations, whereas at first we used it chiefly for difficult abdominal operations in which an extreme degree of relaxation was desired.

V. *Volume:* The volume has varied from 1 to 5 c.c. of spinal fluid. Our usual practice has been to use a 5% solution of the drug as it introduced, that is about 1 c.c. of spinal fluid for each 50 mgs. of novocaine. This concentration has given no trouble and fits in with Lundy's conclusions[11] from experimental study on dogs and clinical experiences that one should avoid concentrations greater than 7 or 8%, preferably not more than 5%. He had one clinical case of a small man in whom a 10% solution caused difficulty in moving his legs, abdominal distention, and inability to void for twenty-four hours. In his dogs he found that 5 c.c. of a 20% solution caused permanent paralysis almost uniformly. The volume was recorded in 260 of the first 500 cases. Five or 2% received a volume of 1 c.c.; ten patients or 4% received 1½ c.c.; 63 or 25% received 2 c.c.; 33 or 13% received 2½ c.c.; 129 or 49% received 3 c.c.; 14 or 5% received 3½ c.c.; three or 1.2% received 4 c.c., and a like number and percentage received 5 c.c.

VI. *Site of Injection:* In our cases we have chosen most frequently the third lumbar interspace and occasionally the fourth, rarely the second. The choice usually being made of the one showing the most separation of the spinous processes from the flexion of the lumbar spine. The height of the anesthesia was determined by the speed of injection, the volume, the dosage, and the position of the patient (gravity) rather than by the site of injection.

VII. *Pre-operative Medication:* Pre-operative medication was recorded in 479 of the first 500 cases. 364 or 75% of these received morphine. For other details see Table 3. A pre-operative hypodermic is not essential and unless there is some positive indication for it, I believe it could well be omitted. The reason we have used it so much is because we have used supplementary gas or ether quite frequently when the patient is nervous. It must be remembered that each sedative given depresses the cellular activity of various organs more or less, and the added depressions caused by the combination of many sedatives, may produce a dangerous degree of depression on some already embarrassed organ. In an intelligent non-nervous patient I believe the spinal should be given without previous medication, and the sedatives reserved until they become really necessary, after the anesthetic has worn off.

Ephedrine was usually given in 50 mg. doses in 2 c.c. of novocaine solution into the skin and subcutaneously at the site of the lumbar puncture immediately before the puncture is made. In the first 500 cases we used it in 180 or 36%. Since then we have used it almost routinely. Where

the doses of novocaine for the spinal is to be low for a low anesthetic only one-half of the ampule or 25 mgs. of ephedrine is used. There are some writers who prefer not to use ephedrine. We experienced no serious consequences in the 320 cases of the first 500 cases in which it was used. However, the fall in B. P. was greater in those cases, so we now prefer to use it routinely. Some writers stress importance of waiting five to ten minutes after giving the ephedrine before injecting the spinal. We find that the two to three minutes necessary to make the puncture, withdraw the spinal fluid, and dissolve the novocaine crystals, plus the time of two to five minutes before the drug takes effect, gives ample time for the ephedrine to act to support the B. P. In cases of hypotension we prefer to wait a full five minutes before giving the spinal. In hypertensive cases we give the spinal as quickly as possible after the ephedrine or sometimes reduce the dose of ephedrine. In cases for prostatic resections where only a low anesthetic is needed and a slight fall in B. P. desirable to aid in controlling hemorrhage the ephedrine is omitted altogether.

VIII. *Duration of Anesthesia and Operation:* We have no accurate figures on the actual duration of the anesthetics except in cases where the operation has outlasted the anesthetic. In the first 500 cases there were 30 cases in which the operative time exceeded one hour. In 10% of these additional anesthesia was necessary. The longest operation without additional anesthesia was one and one-half hours. The average operative time was 37.9 minutes. 82 or 16.4% had some additional anesthesia. 47 were given nitrous oxide, 32 were given ether, and five were supplemented with local. Most of these supplementary anesthetics were given not because of the failure of the spinal, but because of unusual anxiety on the part of the patient, or because the anesthetic did not last long enough. Most patients retain their deep muscles sensation and can tell when retractors are used; and some feel pain in the epigastrium, reflexly through the vagus distribution, when traction is made on the cecum or mesentery. Some nervous patients interpret these sensations as severe pain and it becomes necessary to relieve their anxiety. In our more recent cases the percentage of additional anesthesia has decreased to some extent due to improved technique and experience. But the nervous patients who just know it is going to hurt are given additional anesthesia, in small amounts, right from the start.

IX. *Blood Pressure and Pulse Studies:* In as much as the fall of B. P. that usually accompanies spinal has been considered one of its inherent drawbacks we have made a special study of the B. P. in the first 500 cases. Accurate readings of the B. P. were made before the operation and every five minutes during the operation. These figures have also been compared with the B. P. taken on admission to the hospital. The average reading on admission to the hospital was 116/60. The pre-operative B. P. reading averaged 118/84. It will be noticed that there was only a slight rise in the average systolic pressure, but a considerable rise in the diastolic. We interpret that as due to pre-operative apprehension. This reading was taken

on arrival in the operating room. The pulse rate pre-operatively was also increased. The average being 102 as compared with the average pulse rate of 80 on admission. The average of the highest points the B. P. reached during the operations was 143/74 with an average high pulse rate of 116. The lowest B. P. average was 102/60 with a low pulse average of 94. It will be noticed that the rise above the pre-operative B. P. was greater than the average fall. The systolic rising 25 and falling only 16 mm. Hg. The high diastolic pressures averaged above the pre-operative diastolic pressures by 10 mm. and the low diastolic average was 24 milometers below the pre-operative, but was the same as the diastolic on admission. We interpret this as a return toward the normal with the lessening of apprehension that occurs when the patient realizes that all is going well and that the operation is not going to hurt as anticipated—also to the slowing of the pulse due to the increasing vagal influence with the diminution of the accelerator influence. The final B. P. reading at conclusion of operations averaged 113/65 which compared favorably with the average admission B. P. of 116/60 and with the pre-operative B. P. average of 118/84.

Forty-two patients or 11% had a B. P. fall of 40 to 50%. One patient had a fall of 75% and one patient of 100%. The fall to zero was in a female aged 22 whose general condition was good and who had been given spinocaine (one 2 c.c. ampule: 200 mgs. novocaine) and had had no pre-operative ephedrine. Her B. P. rapidly returned to 100/60 and no stimulation was necessary. Her respirations ranged from 20 to 30 and were of good depth. There were no post-operative complications. The patient whose B. P. fell 75% was a case of shock from internal injuries sustained in an automobile accident.

Forty-eight or 13% showed a high pulse rate of 140 or more. A fall in B. P. is not considered as dangerous alone as it is with a corresponding increase in the pulse rate showing the inability of the heart to carry on in the face of a falling B. P. Ten of the patients with a fall in B. P. of 40 to 50% showed a pulse rate of 130 or more. The patient with a fall to zero had a high pulse rate of 128. The one with a 75% drop had a pulse rate of 160. This was the highest pulse rate recorded. The lowest pulse rate was 52.

X. *Studies of the Respiration:* The respirations were usually slightly increased, ranging on the average from 20 to 25 per minute. In eight cases or 1.6% it rose as high as 30 and in only three or 0.6% was it over 40. The highest rate was 46. Respirations were usually slightly diminished in depth but in no cases did other than mild cyanosis occur, and in no cases did respiration cease. Artificial respiration was not necessary. Some patients complained of pressure as of a weight on the chest when the anesthesia ascended as high as the upper thoracio segments. A few complained of shortness of breath. These symptoms were treated by inhalation of carbon dioxide and oxygen. Most deaths reported in literature have been due to respiratory failure. Fortunately we have not had this complication. It is undoubtedly due when it occurs to one or more of several

mechanisms associated with the fall in B. P. We believe this complication is entirely preventable, by a thorough knowledge of the physiology involved in spinal anesthesia. The most recent and best studies of the physiology and fatalities are studies by K. W. Thompson and Ferguson and North and Bower.[12 13 14 15] By keeping accurate check on the B. P. pulse, and respiration and anticipating complications before they occur we have been able to prevent any deaths from respiratory failure (see mortality statistics below).

XI. *Operative Complications and Treatment During Operation:* Complications from the anesthetic during the operations were comparatively rare. The changes in the B. P., pulse and respiration have been described above. Ten of 375 patients or 2.7% were given morphine during the operation because of restlessness or returning sensation near the end of the operation. Digifolin was given to two of 375 or 0.5% patients. Caffeine sodium benzoate was given to fourteen or 3.7%. Intravenous treatment was given to twelve or 3.2%. Four or 1% were stimulated with adrenalin, seventeen or 4.5% with ephedrine. Nausea and vomiting occurred in an occasional patient. These symptoms were combatted by deep breathing, smelling ammonia, and inhalation of carbon dioxide and oxygen.

XII. *Morbidity:* In the first 500 cases there was the usual run of complications. No attempt will be made to say that none of them were due to the spinal, but the complications will be listed and the reader may

TABLE III

Pre-operative Mediation in first 500 Spinal Anesthesias

Morphine	*Pantopon*	*Hyoscine*	*Scopolomine*	*Atropine*	*Nothing*
13	1	5	3		11
10	1	1	2	6	14
12	0	1	0	11	11
16	0	4	1	11	8
21	1	5	0	17	3
24	0	5	0	19	1
20	1	6	0	15	3
18	7	4	0	18	1
6	6	1	1	8	6
17	3	5	1	14	3
15	6	4	0	15	3
18	6	7	0	13	1
18	7	8	0	18	0
22	0	15	0	10	0
22	0	14	0	4	4
24	0	12	0	13	1
23	2	16	0	9	0
23	2	15	0	11	0
18	2	15	0	4	0
24	1	15		10	0
—	—	—	—	—	—
364	45	158	8	227	70
75%	9%	34%	1.7%		15%

TABLE V

Ratio of Deaths following various Anesthetics

During Operation	*Nitrous Oxid Ether or Both*	*N_2O and Ether*	*Local*	*Total all Others*	*Total Spinal*
1st 6 hrs	1	0	0	1	0
2nd 6 hrs	2	1	2	5	1
3rd 6 hrs	3	0	1	4	2
4th 6 hrs	1	1	0	2	3
	7	0	1	8	3
Total 1st 24 hrs	14	2	4	19	9
2nd 24 hrs	4	0	2	6	12
Total 1st 48 hrs	18	2	6	25	21
3rd 24 hrs	4	1	2	7	4
4th 24 hrs	2	0	0	2	6
5th 24 hrs	5	0	1	6	5
6th-10th day	7	2	4	13	8
11th-15th day	2	5	1 (sacral)	8	5
16th-20th day	1	0	1	2	3
21st + days	4	4	4	12	13
Total	43	14	17	76	65

TABLE IV

A. Complications in 1st 500 Spinals given due to or contributed to by the Anesthetic	*No.*	*%*
1. Troublesome persistent headache	9	1.8%
2. Bronchitis	5	1.0%
3. Pneumonia	4	0.8%
4. Shock	4	0.8%
5. Acute Myocarditis	4	0.8%
6. Temporary inability to void	4	0.8%
7. Psychoses	3	0.6%
8. Convulsions (Eclamptic)	2	0.4%
9. Backache prolonged	2	0.4%
10. Parlyses: Bladder	1	0.2%
11. Dilatation of Stomach	1	0.2%
12. Ileus	1	0.2%
13. Persistent Nausea	1	0.2%
14. Hysteria	1	0.2%
	41	8.2%

B. Other Complications	*No.*	*%*
1. Infected wounds	15	3 %
2. Peritonitis	8	1.6%
3. Urinary infection	7	1.4%
4. Diarrhea	2	0.2%
5. Fecal Fistula	2	1.4%
6. Nephritis	2	0.4%
7. Int. Abstruction	1	0.2%
8. Hemorrhage	1	0.2%
9. Hydrocele	1	0.2%
10. Epistaxis	1	0.2%
	40	8.11%

decide for himself whether or not they were due to the anesthetic. Nine of the first 500 patients complained of headache of prolonged duration, and only one patient had protracted nausea. Most of the patients were remarkably free of the post-operative nausea and vomiting. There were nine respiratory infections. Five were diagnosed as bronchitis, two as pneumonia and two as upper respiratory infections. Unusual backache was complained of by only two patients. Backache is often complained of by

operative patients regardless of the anesthetic and is often due to careless lifting or to the relaxation which occurs on the hard table under anesthesia. The minute trauma of lumbar puncture is rarely the cause of backache in my opinion. For further complications and detains see Table 4.

XII. *Mortality Statistics:* In our 2,122 spinal anesthetics there were 65 or 3.06% deaths as compared with 3,700 major cases done under other types of anesthesia with 76 or 2.28% deaths over the same period of time. The difference between the two mortalities, 0.78%, is, we believe, accountable for by the fact that spinal was used more often in the gravest risks. These figures compare favorably with those of Foss and Schwalm,[15] who compared 2,000 consecutive spinals with 2,000 consecutive ether anesthesias and reported a mortality of 6.5% in the spinal series and 6.85% in their ether series. Their cases were not selected and offer a very fair basis for comparison.

We have classified our deaths according to the various anesthetics (see Table 5) and the ratio time elapsed after operation before death occurred. It will be noticed that only one death occurred on the table and that this was in a case done under ether anesthesia on a patient who was practically moribund from intestinal obstruction. Foss and Schwalm reported ten cases of death on the table in their ether series and only one in their spinal series. Though they say that just as many seriously ill patients were operated upon under spinal as under ether. It will be noticed further that in the first 48 hours after operation there were 25 deaths following other anesthetics and 21 deaths following spinal anesthesia.

Rather than make the bold statement that has been so prevalent in papers on spinal anesthesia that "We have had no deaths that could possibly be due to the spinal anesthesia," we prefer to list all of the cases in which we had deaths, giving a brief resume of the diagnosis, operative complications, circumstances and cause of deaths that the reader may draw his own conclusions. A table of our 65 deaths in our 2,122 spinal anesthesia patients is therefore appended. (See Table 6.) Also a similar table of the 76 deaths following other anesthetics. (See Table 7.)

TABLE VI

Table of Deaths Following Spinal Anesthesia

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
1. 25799 M-74 R. H. M.	Hyper. Prost. ? Ca.	Transuretheal Resection	Nov.	Pneumonia—5th day	Penumonia	12 days
2. 26766 F-18 A. C.	1. Volvus & obstruction Abd. 2. Fecal Fist. & obstruction	1. Release of obst. & enterostomy 2. Resect. fist. tract & intestine.	1. Pant. 10 mgs. Nov. 100 mg. 2cc 2. Gas & ether	1. Fecal Fist. & obstruction 2. Obstruction	Int. Obst.	1. 92 days 2. 28 days
3. 26802 M-33 N. A.	Acute Sup. App. & subhepatic abscess	Appendectomy & drain. abscess cavity.	Spinal Gas 150 Mgs. 2cc	Reaction to intravenous	Peritonitis	6 days
4. 27227 M-49 F. W. G.	Thrombosis Hem. Myocarditis	Hemorrhectomy	Nov. 100 mgs. 2cc	50% fall in B.P., 1 intravenous & eph.	Myocarditis	17 hours
5. 20841 M-52 J. K. J.	Diabetic Gangrene right foot and leg	Amp. lower 1/3 at thigh	Nov. 150 mgs. 1½cc 25% Fall B.P. Cafeine & adr.	Gangrene of stump	Diabetic Gangrene	12 days
6. 20908 F-62 A. F.	Adenocarcinoma of ovaries & general abd. metast.	Appendectomy & Cecostomy	Nov. 150 mgs. 3cc Intravenous	Continued obstruction	Malignancy	23 days
7. 21238 M-59 W. F. F.	Ca. of Prostate Urinary Infection	Suprapubic Cystotomy & Biopsy	Nov. 100 mgs. 1cc	Urinary sepsis uremia	Malignancy	35 days
8. 21822 M-30 F. Mc.	Rupt. App. & drain of abd. abscess	1. Drainage appendiceal abscesses 2. Abscesses	1. Nov. 120 mgs. 2cc 2. 150 mgs. 2cc	Liver abscess Terminal pneumonia	Peritonitis	1. 99 days 2. 79 days
9. 22590 F-27 J. W. Mc.	Post operative adhesions	Release of obstructing adhesions.	Nov. 50 mg. 2½cc Pant. 10 mg. 2½cc	Pulmonary Embolism 5th day	Pulmonary Embolism	6 days
10. 22805 M-37 C. T. M.	Rupt. bladder disimbowedment scored by bull	Abd. exploratory Int. restored to abd. plastic on abd. wall drainage	Nov. 50 mg. Pant. 10 mg. 2½cc.	Sepsis of abd. wall	Sepsis	3 days
11. 23011 M-31 O. W. P.	Perforated Durd. ulcer-Pneumonia (30 hrs.)	Simple closure and drainage	Nov. 160 mgs. 3cc B.P. fall 50%	Peritonitis	Peritonitis	1 day
12. 24022 M-71 A. H. B.	Pros. Hypert. Chr. myocarditis	Suprapubic systotomy	Nov. 100 mg. 2cc	Coronary thrombosis	Coronary Thrombosis	27 days
13. 14382 M-74 W. H. M.	Suppurative Cholecystitis Chr. Nephritis	Cholecystotomy	Nov. 200 mg. 3cc B.P. fall 50% cafeine	Hypostatic pneumonia	Sepsis	20 days
14. 16419 F-45 P. B.	Int. Obstruction abd. adhesions 3 ft. gangrene int.	Resection gangrene Int. Enterostomy	Nov. 150 mgs. 2cc Gas	Int. obstruction		1 day
15. 16180 F-56 E. C.	Int. Obstructions Abd. Adhesions	Release of Adhesion Enterostomy	Nov. 150 mgs. 3cc B.P. 50%		Int. Obstruction	14 hours
16. 16007 F-52 J. C.	Lymphosarcomacolon	Exploratory	Nov. 100 mgs. 2½cc	Gradual circulatory failure	Malignancy	5 days
17. 16652 M-25 R. S. D.	Appendicitis & abscess partial obstruction	Release Adhesion drain abscess	Nov. 150 mgs. 2cc	Fecal fist. circ. collapse	Peritonitis	5 days

TABLE VI—Continued
Table of Deaths Following Spinal Anesthesia

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
18. 16540 M-87 D. G. E.	Hyper. Prostate volvulus of ileum	Prostectomy	Nov. 75 mg. 2cc	Circ. failure	Myocarditis	2 days
19. 15785 M-27 A. E. B.	Intest. obstruction gangrene 2 ft.	Resection of gangrene ileum	Nov. 200 mgs. 2½cc B.P. fall 25% intravenous	Patient did not rally	Intest. Obstruction	40 hours
20. 15822 M-35 R. H. S.	Acute Choleystitis Pancreatitis Hepatitis	Exploratory Cholecystotomy	Nov. 200 mg. 3cc, Gas & ether, B.P. fall 25% Stimulus & fluid	Bloody diarrhea & vomiting abdominal ascites	Sepsis	4 days
21. 15402 M-50 W. T. R.	Ca. of head of pancreas Part obst. Enemia	Gastro-Enterostomy	Nov. 200 mg. 5cc B.P. Fall 50% Intravenous	Continuous vomiting. Increasing inanition	Malignancy	8 days
22. 14966 M-50 J. C.	Acute Mesentery thrombosis	Appendectomy drained	Nov. 75 mgs. 3cc	Lymphangitis, Hepatites Pleurisy, Circ. Failure	Peritonitis	24 days
23. 13357 M-75 A. L. P.	Ca. of Cecum	Right colectomy side to side anest. ileum to colon	Nov. 200 3cc 2 hrs. ether ½ hr.	Femoral thrombosis-left-gangrene left leg	Thrombosis	19 days
24. 13733 M-22 J. McF.	Complete Epistatidus	1. Uretero-Sigmoid 2. Enterostomy	1. Nov. 2. Local	Peritonitis	Peritonitis	1. 4 days 2. 8 hours
25. 13271 F C. E. B.	Int. Obstruction Abd. Adhesion Gangrene small Int.	Release adhesions double Enterostomy	Nov. 25 mgs. 2cc B.P. fall 50%		Int. Obstruction	12 hours
26. 12290 F-33 G. P. J.	Chronic Cholecystitis myocarditis	Cholecyotectomy	Nov. 200 3cc	Heat stroke ?	Myocarditis	36 hours
27. 12620 M-62 S. G.	Acute rupture appendicitis small abscess	Appendectomy drained	Nov. 150 3cc B.P. 25%	Coronary Thrombosis	Coronary Thrombosis	54 days
28. 10063 M-30 L. C.	Gun shot of abd. Pref. intest. & mesenteric B. V.	Exploratory drainage	Nov. 150 mgs. 2cc B.P. fall 50%	Peritonitis	Peritonitis	3 days
29. 10012 M-64 W. E. Mc.	Intest. obstruction from impact gall stone. Morphine addict 40 years.	Removal of gall stones from jejugum	Nov.	Toxaemia Inanition	Int. Obstruction	4 days
30. 10005 F-51 F. A. A.	Subacute Gb. with stone in common duct	Cholecystectomy, Choledoctotomy, removal of stones	Nov., Gas & ether, 1 hr. 50 min., B.P. fall 25%	Lobar pneumonia	Lobar pneumonia	2 days
31. 9669 M-61 D. W. A.	Chronic Cholecystitis Chronic Appendicitis Chronic Myocarditis	Cholecystectomy Appendectomy	Nov. 150 Mgs. 2cc B.P. 25%	Bronchial Pneumonia	Bronchial Pneumonia	5 days
32. 9626 F-86 K. B. H.	Acute gangrenous ruptured append. with multiple abd. abscess & peritonitis	Appendectomy, Double Enterostomy and drainage	Spinocaine B.P. fall 50%	Lack of resistance due to age	Peritonitis	8 days
33. 9426 F-55 M. F.	Acute ruptured appendicitis with peritonitis	Appendectomy drainage	Nov. B.P. 25%	Inanition (Pellegra)	Inanition	27 days
34. 8197 M-21 L. H.	Fracture left femur Rup't. Fem. Art. Shock & Hem.	Amputation left leg mid-thigh	Spin. 1½cc B.P. Fall 50% Transf.	Continued shock	Fract. Femur	5 hours

TABLE VI—Continued
Table of Deaths Following Spinal Anesthesia

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
35. 8040 F-30 E. E. B.	Peritonitis, Strict. right ureter	Ureterotomy, Expl. & drain abd.	Spin. 3cc B.P. fall 25%		Peritonitis	36 hours
36. 18576 M 65 S. L. C.	Aneurysm of abd. Aorta	Expl. for abd. tumor Appendectomy	Nov. 150 mgs. 3cc B.P. fall 75% Intravenous	Circ. Failure	Aneurism of Aorta	2 days
37. 18008 F-51 H. A.	Thrombosis Sup. Mes. Art & auric fibrillation	Exploratory Enterosotomy	Nov. 150 mgs. 2cc, B.P. fall 50%	Circ. Failure	Mesenteric Thrombosis	12 hours
38. 17859 M-67 W. F. L.	Chronic Gall Bladder with acute Exacerbation acute Pancreatitis Int. Obstruction	Release of Obstruction Repair Hernia	Nov. 200 mgs. 4cc B.P. fall 50% intravenous	Continuous nausea vomiting	Int. Obst.	50 days
39. 19245 M-85 W. E. A.	Prostatic Hyper. Senility	Prost. Resection	Uremia	Uremia		6 days
40. 17314 F-66 B. L.	Acute Perforated Appendicitis	Appendectomy Drainage	Nov. 150 mgs. 2cc	Perionitis	Peritonitis	43 days
41. 17125 F-55 J. N. O'B.	Part. Int. Obst. from post operative adhesions Nephritis & Hypertension	Releasing Adhesions	Nov. 200 mgs. 2cc Ether 3 hrs. B.P. fall 50% intravenous	Partial Obstruction	Int. Obstruction	43 days
42. 14960 M-50 J. C.	Acute gangrenous app.	Appendectomy & mesentectomy drainage	Nov. 175 mg. 3cc	Lymphangitis & Peritonitis, Hepatititis, Pleurisy	Peritonitis	24 days
43. 20044 F-84 A. N.	1. Incisional Hernia 2. Gangrene Left Leg	1. Repair of double hernia & old Incision Suture of tear & sigmoid	Nov. 150 mg. 2½cc B.P. fall 50%	Thrombosis of art. of left foot, right foot, left hand, etc.	Multiple Arterial	90 days
44. 25043 F-64 D. G.	1. Uterin prolapse cystocele & rectocele 2. Rupture abd. wound	1. C of C Perineotophy suspension of stump of cervix 2. Closure of rupt'd. abd. wound.	1. Avertin & ether 2. Spin. 150 mgs. 2cc B.P. fall 25% Caffeine sod. ben.	1. Rupture of abd. 2. Uremia	Uremia	1. 8 days 2. 2 days
45. 7332 F-53 C. B. K.	Ulcerations of Rectum of malignancy	Resection of Rectum End to End Anast.	Spin. & gas 2cc	Peritonitis	Peritonitis	9 days
46. 6376 F-28 R. H.	Bilateral ureteral Obstruction-Cancer of Cervix	Bilat. Ureterotomy	Spin. 2cc	Gradually grew weaker and succumbed to malignancy	Malignancy	6 months
47. 11805 F-19 S. H.	Pelvic Abscess ext. to liver on right second anemia	Drainage of Pelvic abscess	Nov. 150 2cc	Post operative shock	Sepsis	20 hours
48. 11636 M-40 T. S. V.	Strang. femur Hernia with gangrene of ileum	Repair of femur hernia. Resection & end to end anest.-jejumos	Nov. 200 mgs. 3cc, Gas & ether 2 hrs. 15 min.	Paralytic Ileus	Int. Obstruction	3 days

TABLE VI—Continued
Table of Deaths Following Spinal Anesthesia

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
49. 11403 F-30 A. L. N.	Septic abortion, Septic Thrombosis, Phlebitis	D & C suspension of uterus	Nov. 150 mgs. 2½cc ether 80 minutes	Septicaemia	Septicaemia	2 days
50. 11495 F-54 T. T. F.	Large ov. cyst.	ov. cystectomy Bilat. Salpingectomy	Nov. 200 mgs. 3cc	Gradually progressing Myocardial failure	Myocarditis	7 days
51. 11494 M-60 H. D.	Traumatic rupture of ileum Diabetes, Chr. Gb. Myocarditis Intra. Abd. Hem.	Resection end to end anest.	Nov. 200 mgs. 2cc, B.P. fall 75% Stimulant & intravenous	Failure to maintain circulation from traumatic & operation shock	Myocarditis	26 hours
52. 11389 M-24 J. L.	Pistol shot wound left thorax & abd.	Suture perforated stomach	Nov. 200 mgs. 3½cc, B.P. fall 25% ether 2 hrs.	Lobar pneumonia	Pneumonia	36 hours
53. 11219 M-51 W. H. R.	Peritonitis from rupt'd. appendix & gangrenous	Appendectomy & drainage	Nov., B.P. fall 75% stimulants & fluid	Pneumonia	Pneumonia	6 days
54. 11198 M-28 L. M. D.	Acute Gb. & Pancreatitis subacute append.	Cholecystotomy Appendectomy	200 mg. 3cc B.P. fall 25%	Psychosis	Psychosis	36 hours
55. 11180 M-40 J. J. P.	Ca. of head of Pancreas Obst. C. Bile Duct.	Cholecystduodenostomy	Nov. 150 mgs. 3cc	Circulatory failure from toxic	Malignancy	32 hours
56. 10851 F-24 H. L. T.	1. Lacerated & infected cervix-Bilat. Salp. & Chr. Append. 2. Intest. Obst. from pelvic abscess	1. D & C, C of C app. & suspension 2. Enterostomy & drain abscess	1. Nov. 150 mgs. 3½cc Gas 2. Nov. 150 mgs. 3cc	1. Instest. Obst. with pelvic abscess	Intest. Obstr.	1. 39 days 2. 11 days
57. 10450 F-27 M. F.	Carcinomotosis of abd.	Exploratory Lap.	Nov. 200 mg. 2cc		Malignancy	14 days
58. 10407 F-78 F. C.	Int. Hernia	Repair of Int. Hernia	Nov. 150 mgs. 3cc	Sudden death—cardiac failure	Myocarditis	5 days
59. 10268 F-36 V. A.	Acute Cholecystitis	Cholecystotomy	Nov. 200 mgs. 3cc Gas & ether	Reaction to Intravenous Glucose—Sudden death accute dilatation of heart	Myocarditis	16 days
60. 10321 M-50 E. F. L.	Gun shot wounds of abd. and hand. Severe shock	Suture of perforations Ligation bleeding vessels	Nov. 200 mgs. 3cc, Gas & ether 1 hr. & 50 min., B.P. fall 25%	Peritonitis	Peritonitis	2 days
61. 25688 F-23 C. J.	Salpingitis & Peri. App.	Bilat. Salpingecto & App.	Nov. 200 mgs. 2¼cc gas & ether B.P. fall 25%	Strep. Septicaemia	Septicaemia	5 days
62. 26460 F-45 W. M.	Intest. Obst. post operative adhesions.	Release of Adhesions	Nov. 100 mg. 3cc	Sudden cardiac failure Partial Ileus	Myocarditis	4 days
63. 26713 M-70 J. M. M.	Prost. Hyper.	Resection	Nov. 100 mg. 1cc Hypertension	Hem. at operation Hypertension	Hemorrhage	3 days
64. 27855 M-80 W. M. Y.	Diverticulum of Bladder	Suprapubic removal of stones	Nov. 100 mgs. 2cc B.P. fall 60% Stimulants	Apoplexy	Apoplexy	11 days
65. 21360 F-38 A. B.	Ca. of Sigmoid with Int. Obst.	1. Miculicz 1st stage 2. Miculicz 2nd stage	1. Spin. & gas & ether Nov. 200 mgs. 3cc 1 hr. 20 min. 2. Gas & ether	Peritonitis	Malignancy	1. 4 days 2. 3 days

TABLE VII—ALL OTHER ANESTHETICS

Table of Deaths Following (1) Nitrous Oxide or Ether or Both

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
1. 24722 F-62 H. McK.	Volvulus Sigmoid	Volvulus release	Gas & ether	Moribund on Adm.	Int. Obstruction	24 hours
2. 24256 F-42 S. A. B.	Premature separation from rupture of uterus Uremia	Caesarian	Gas & ether	Uremia	Uremia	24 hours
3. 21465 F-6 Mos. B. E. H.	Bilat. Otitis Media, Bilat. Mastoiditis.	Bilat. Mastoidectomy	Open drop ether	Post operative shock	Sepsis	10 hours
4. 23475 F-11 Mos. A. P. W.	Volvulus and diverticulum & peritonitus	Release of volvulus of ileum	Open drop ether	Vomiting-Acidosis	Peritonitis	1 day
5. 23424 M-63 A. R.	Ca. of Recto. Sigmoid	Cotostomy 1st stage of combined operations	Gas & ether	Fecal fist. with peritonitis	Malignancy	4 days
6. 13893 M-50 F. D.	Ca. of throat	Coag. Radium Gastrotomy	Gas & ether, Open drop	Terminal pneumonia Hemorrhage	Malignancy	24 days
7. 14334 M J. R. G.	Complete fracture of femur	Debridement Reduction of cast	Gas	Continued shock	Fracture	1 day
8. 14805 M-67 L. G.	Suppurative Axillary Adenitis	Inc. & Drainage Exc. of glands	Gas & ether	Sudden death, Pulmonary Embolism	Pulmonary Embolism	5 days
9. 16492 M-5 Wks. W. C. B.	Congenital Pyloric Stenosis	1. Ramstedt 2. Gastro-enterosoty	1. Ether 2. Local	Continued Obstruction	Int. Obstruction	1. 41 days 2. 39 days
10. 14033 F-45 J. V. B.	Ca. of Gall Bladder & Chronic Gall Bladder, Chronic Myocarditis	Cholecystectomy	Gas & ether	Circulatory failure	Malignancy	7 days
11. 16345 M-24 A. R. A.	Subacute Cholecystitis	Cholecystectomy Appendectomy	Gas & ether	Circulatory failure	Myocarditis	2 days
12. 16223 M-19 L. L.	Acute Appendicitis	Appendectomy	Gas & ether	Out of bed 8 days—sudden death, Embolus	Pulmonary Embolism	3 days
13. 13514 F-24 O. W.	Post abortion Suppurative Adenitis	Inc. & Drainage	Gas & ether	Septicaemia	Septicaemia	5 days
14. 13579 M-7 W. L. W.	Acute Perf. append. with peritonitis	Appendectomy drainage	Gas & open ether	Pulmonary Embolism	Pulmonary Embolism	6 days
15. 12454 M-31 W. L. H.	Acute Appendicitis General Peritonitis	Drainage of Abd.	Gas & ether		Peritonitis	10 days
16. 12339 M-50 W. P. C.	Acute Appendicitis Myocarditis	Appendectomy	Gas & open ether	Ran increase in temperature	Myocarditis ?	5 days
17. 12769 F-67 D. D.	Chr. Colecystotomy Append.	Cholecystectomy & Appendectomy	Gas & open ether	Nausea & vomiting	Coronary Thrombosis	44 hours

TABLE VII—ALL OTHER ANESTHETICS—Continued

Table of Deaths Following (1) Nitrous Oxide or Ether or Both

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
18. 8536 F-46 V. P.	Infected S. Lymphangitis	1. I&D of thenar eminence 2. I & D & drainage of forearm 3. Amputation 5th finger	1. Gas 2. Gas 3. Gas	Spreading infection Septicaemia	Septicaemia	14 days
19. 9486 F-39 L. C. T.	Cystocele Rectocele Prolapse of uterus	Trach. & Colp. Subtotal Hyst. & App.	Gas & ether	Cardiac failure	Myocarditis	36 hours
20. 9048 F-79 G. W. F.	Subacute Gb. with stones	Cholecystectomy	Gas	Pyshonephritis Inanition	Inanition	36 days
21. 9492 M-66 E. K. P.	Prostatic Hyper.	Prostatectomy	Gas and Local	Severe bleeding & Op. packed	Myocarditis	3 days
22. 18065 M-8 P. M.	Acute gangrenous App. with abscess	Appendectomy with drainage	Open drop ether	Circ. failure	Myocarditis	13 hours
23. 27239 M-13 W. D. D.	Rupt. Liver & Kidney Hem. & shock	Nephrostomy Liver wound packed	Gas	Continued shock & Hem.	Hemorrhage	9 hours
24. 17866 M-33 E. M. P.	Acute gangerous Appendicitis	Appendectomy	Gas & ether	Ileus	Peritonitis	6 days
25. 19469 M-13 R. H.	Infected foot Septicaemia	Inc. & drainage of foot	Gas	Spreading infection	Septicaemia	3 days
26. 17792 M-5 Wks. D. W.	Congenital pyloric stenosis	Ramstedt	Open ether	Bronchial pneumonia Acute Otitis Media	Pneumonia	13 days
27. 19422 M-3 Mos. B. A.	Otitis Media-Bilat. Mastoiditis	Bilat. Mastoidectomy	Open ether		Sepsis	1 day
28. 13089 F-30 J. S.	Acute gangrenous Pancreatitis	Drainage head of Pancreas	Gas & Local	Metastic abscess of jaw —Renal stone—lobar pneumonia	Sepsis	28 hours
29. 8319 F-60 A. V.	Toxic Adenoma of Thyroid Myocardial Degeneration	Thyroidectomy	Gas & ether	Thyrotoxicosis Myocardial failure	Myocarditis	28 hours
30. 8122 F-14 L. C.	1. Acute gangrenous perforated app. with peritonitis 2. Obstruction	1. Appendectomy with drainage 2. Enterostomy	Gas & ether Gas & ether	Intest. obstruction	Intestinal Obstruction	1. 5 hours 2. 2 hours
31. 7950 M-8 Mos. E. E. S.	Intussusception (Ileocecal) Practically moribund	Reduction of Intussusception	Local & ether		Intest. Obstruction	1 hour
32. 7768 M-101 J. L. R.	Hyper. Prostate	Suprapubic Prostatect. 2nd stage	Gas & ether	Mod. Hemorrhage	Hemorrhage	20 hours
33. 7791 F-3 M. A.	Volvulus small intest. 2 ft. gangrenous	Release of Volvulus	Open ether	Death on table	Int. Obstruction	0

TABLE VII—ALL OTHER ANESTHETICS—Continued

Table of Deaths Following (1) Nitrous Oxide or Ether or Both

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
34. 7341 F-54 C. W.	Chronic Cholecystotis with stone in common duct	Cholecystectomy, Tranduodal, Choledochotomy	Gas & open ether 2 hrs.	Circ. failure	Myocarditis	7 days
35. 7240 F-32 G. M. C.	Laceration of cervix-perineum-Recto-Endometritis & ov. cyst.	C. of C. Trachel. Subtotal Hyst. & right oophorostomy	Gas & ether 2 hrs.	Nervous exhaustion Delerium, Nausea & vomiting	Psychosis	5 days
36. 7082 F-45 J. R. S.	Hyperthyroidosis	Thyroidectomy	Gas & Local	Thyroid & cardiac failure	Myocarditis	24 hours
37. 6947 F-45 E. T. W.	Prolapse Uterus Vanicose Veins	C of C Subtotal Hysterectomy	Gas & ether	Insanity, unexplained fever	Psychosis	4 days
38. 12072 F-33 A. L. S.	Cancer of Uterus	Biopsy, Radium	Gas & ether		Malignancy	20 days
39. 10866 F-73 H. M. G.	Chr. Gb. with Duodual fistula	Cholecystectomy, Closure of opening duod. drainage of common duct.	Gas	Myocardial failure	Myocarditis	3 days
40. 10550 M-73 H. M. G.	Compound complete fracture Humerus & fracture Ileum Laceration of cheek	Debridement-reduction-Doleris tubes	Gas & ether	Septicaemia Septic Authoritis knee	Septicaemia	8 days
41. 10436 M-3 L. F.	Phimosis	Circumsion	Ether	Pneumonia—nausea—vomiting	Pneumonia	24 hours
42. 27933 M-39 A. J. H.	Abscess of left thigh staph Septicaemia	Inc. & drainage abscess of thigh	Gas		Septicaemia	3 days
43. 28065 M-7 Mos. B. M.	Intussuseptic Pract. moribund	Reduction of Intussusepticc Append.	Ether open drop		Int. Obstruction	3 days

TABLE VII

(2) Avertin & Gas or Ether or Local

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
1. 23860 F-51 R. V. B.	Ca. Pancreas Tbc. Peritonitis	Gastro-Enterostomy	Av. gas & ether		Malignancy	80 days
2. 25138 M-23 W. A.	Gun shot wound of abd. Int. Hemorrhage	Suture Perforated Stomach Lig. of bleeding vessels	Av. gas & ether	Int. Hem.	Hemorrhage	14 days
3. 25898 F-26 H. P. B.	Cervicitis-Hemorrhage Ret.-Append.	D & C-C of C Hem. Suspension-Append.	Av. gas & ether	Pelvix-Peritonitis Pychitis Strep. Septicaemia	Hemorrhage	13 days
4. 23598 F-34 F. P. F.	Bilat.-abscess & acute Append.	C of C Bilat. Oop. & append.	Av. gas and ether	Acute Pellegra (Diarrhea)	Inanition	29 days
5. 14881 M-68 T. G. D.	Bilateral Ing. Hernia & StrangHemorrhoids Bronchitis	Bilat. Hemiotomy Hemorrhoidectomy	Av. Local & gas	Dementia, Bronchial Pneumonia	Bronchial Pneumonia	8 days
6. 16604 M-40 W. A. B.	Ca. of tongue	Tracheotomy & Gastostomy Radium	Av. & gas	Mediestinal, Metastosis, Hemorrhage	Malignancy	12 days
7. 15924 F-60 E. N. S.	Ca. of head pancreas Chron. Cholecystitis	Cholecystotomy	Av. gas-ether	Circulatory failure	Malignancy	16 hours
8. 15472 F-55 L. B.	Colloid-Thyroid-Toxic	Thyroidectomy	Av. & Local	Post Op. Thyrotoxicosis Acute Dilation of heart	Malignancy	2 days
9. 12068 F-50 P. G.	Ca. of Cervix	Complete Hysterectomy	Avertin	Urinary Fistula Paralytic Ileus	Malignancy	50 days
10. 19396 M-6 Mos. K. K.	Intest. Obstruction from intussusception Ileocecal	Reduction of Intussusception, Appendectomy	Avertin & ether	Shock	Int. Obstruction	2 hours
11. 19160 M-19 J. W. H.	Osteomyelitis of skull	Removal of diseased bone	Avertin & ether	Brain abscess	Sepsis	14 days
12. 17185 F-23 B. N.	Pelvic Imfd. & Peritonitis	Drainage of pelvis	Avertin & ether	Nausea & vomiting	Int. Obstruction	44 days
13. 28748 F-70 F. L. D.	Chr. Gb. Pancreatitis	Cholecystotomy	Av. gas & ether	Bilat. Bronchial pneumonia	Pneumonia	3 days
14. 27981 F-67 A. C.	Path. fracture, Humerus Carcinomotomy (Breast)	Closed reduction	Av. & gas	Sudden Cardiac death	Malignancy	12 days

TABLE VII (3) Local Anesthesia

Hosp. No. Identity	*Diagnosis*	*Operation*	*Anesthetics*	*Complications*	*Cause of Death*	*Time Before Death*
1. 24639 M-30 H. M. K.	Multiple fractures	Reduction of Compound fracture	Local	Pneumonia	Pneumonia	3 days
2. 24544 M-72 E. S. H.	Hypertophy Prostate	Superpubic cystotomy	Local	Cardiac failure, Bronchial pneumonia	Myocarditis	40 days
3. 25826 F-33 V. W. C.	Gun shot wound head, chest, abd.	Suture perforated stomach	Local & gas	Hemorrhage of lung	Hemorrhage	3 days
4. 22044 M-78 S. P. S.	Hyper. Prostate	Ligation Vis., Resection Prostate	1. Gas 2. Sacral	Circulatory failure	Myocarditis	1. 34 days 2. 15 days
5. 14391 M-36 S. L.	Empyema	1. Thoractomy with tube 2. Thoractomy with tube	Local	Hemorrhage	Hemorrhage	1. 18 days 2. 10 days
6. 13929 F-60 S. M. L.	Suppurative Obst. about right kidney-Chronic Myocarditis	Exploratory-Drainage of Suppurative area	Local	Gen. Peritonitis	Peritonitis	8 days
7. 13212 M-76 J. P. T.	Prostatic Hyper. Acute Ret. Pyelonephritis	Trocar Cystotomy (Suprapubic)	Increasing Uremia	Sepsis	Sepsis	5 days
8. 12843 M-14 Mos. R. J.	Acute Indigestion Otitis Media Mastoiditis	Bilateral Mastoidectomy	Local		Sepsis	12 hours
9. 12605 M J. S. D.	Fracture of pelvis Delaye shock Hem. into perineum	Exploratory Abd. Suprapubic Cystotomy Hernotomy removed & packed	Local	Continued shock	Hemorrhage	1 hour
10. 9942 M-59 C. E. C.	Uretheral Obstruction Bilat Hydronephosis Uremia	Ureterostomy	Local		Uremia	26 days
11. 7909 M-34 R. C. M.	Fracture Pelvis-Shock-Exposure-Nephritis	Thoracotomy with drainage (3 wbs. ofter accident)	Septicaemia & multiple abscesses	Local	Septicaemia	21 days
12. 8207 F-39 F. G.	Malignant tumor of neck	Gastrotomy	Local	Inanition	Malignancy	21 days
13. 8335 M-5 Mos. C. Y.	Colitis & Mastoiditis	Bilat. Mastoidectomy	Local		Sepsis	2 days
14. 9243 M-68 S. M.	Prostatic Hyper. (Ca. of stomach) Abd. ascites	1. Suprapubic Prostotectomy 2. Abd. Paracentisis	Local	Pelvic Perit.	Malignancy	19 days
15. 17824 M-85 J. S. H.	Left Ing. Hernia Pelvic abscess pointing in hernia sack	Drainage Abscess in Hernia sack	Local	Autopsy showed rupture small Intestine	Peritonitis	7 days
16. 17681 F-2 V. D. C.	Multiple lung abscess	Resection & drainage	Local	Continuous suppuration	Sepsis	6 days
17. 7652 M-71 S. F.	Hypert. Prostate Acute Peritonitis	Suprapubic Cystotomy	Local	Uremia & acute Supp.	Uremia	1 day
18. 7157 M-75 C. C. C.	Hypert. Prostate Myocarditis	1. Suprapubic cystotomy 2. Prostotectomy	1. Local 2. Sacral	Operation shock	Myocarditis	32 hours
19. 11962 M-36 W. H.	Cer. Tumor	Removal of bone flap.	Local	Post operative shock	Malignancy	4 hours

The causes of death in our spinal series as compared with other anesthetics are listed in Table 8.

TABLE VIII

The Causes of Death

		N_2O or Ether or Both	Avertin & N_2O or Ether or Both	Local or Local	Total All Others No.	Total All Others %	Total Spinal or Spinal No.	Total Spinal or Spinal %
1.	Peritonitis	3	1	2	6	8 %	13	20 %
2.	Intestinal Obstruction	6	2	0	8	10.6%	10	15.4%
3.	Malignancy	4	5	3	12	16 %	8	12.6%
4.	Operations on Stomach and intestines (resections)						13	7
	(Cardiac Failure)							
5.	Pneumonia	2	2	1	5	6.6%	5	7.7%
6	Sepsis	3	1	4	8	10.6%	4	6.3%
7.	Septicemia	5	0	1	6	8 %	2	3.1%
8.	Thrombosis							
	(1) Coronary	1	0	0	1	1.3%	2	3.1%
	(2) Mesenteric	0	0	0	0	0	1	1.6%
	(3) Peripheral	0	0	0	0	0	2	3.1%
9.	Embolism							
	(1) Pulminary	3	0	0	3	4 %	1	1.6%
10.	Hemorrhage	2	2	3	7	8 %	1	1.6%
11.	Uremia	1	0	2	3	4 %	2	3.1%
12.	Apoplexy	0	0	0	0	0	1	1.6%
13.	Fracture	1	0	0	1	1.3%	1	1.6%
14.	Psychosis	2	0	0	2	2.6%	1	1.6%
15.	Inanition	1	1	0	2	2.6%	1	1.6%
16.	Aneurism	0	0	0	0	0 %	1	1.6%
17.	Gangrene	0	0	0	0	2.6%	1	1.6%
	Total	43	14	17	76		65	

The types of operation in which death occurred are listed in Table 9.

TABLE IX

Types of Operations in Which Death Occurred

		Spinal Anesthesia	All Other Anesthetics
1.	Appendectomies (c abscess or peritonitis)	10	7
2.	Operations on Gall Bladder, Bile ducts & Pancreas	7	8
3.	Exploratory Laparotomies (cancer, Tbc.)	5	2
4.	Operations on Stomach and intestines (resections-	13	7
5.	Intestinal Obstructions (Adhesions-volvulus, intussusceptions, etc.)	5	6
6.	Operations for Traumatic rupture of abdomen and various organs (gun shot wounds, stab wounds, etc.)	5	2
7.	Amputations	3	0
8.	Operations on Bladder	3	3
9.	Prostatectomies (including resections)	4	5
10.	Operations on kidneys, pelves and ureters	1	3
11.	Inc. & Drain Pelvi or abd. abscesses	2	2
12.	Suspension of Uterus	0	1
13.	Subtotal Hysterectomy	0	3

14.	Total Hysterectomy	0	1
15.	D. & C. for Septic Abortion	1	0
16.	Operations on tubes and ovaries	2	1
17.	Caesarions	0	1
18.	Heniorrhaphy	2	1
19.	Open reduction of Fractures	0	4
20.	Hemorrhidectomy	1	0
21.	Inc. & Drainage Infections, Abscess (including Osteomyelitis)	0	7
22.	Rupture of Abdominal Incision	1	0
23.	Circumcision	0	1
24.	Craniotomies		1
25.	Mastoidectomies } None done under spinal		4
26.	Thyroidectomies } None done under spinal		3
27.	Thoracotomies } None done under spinal		3
		65	76

Classification of deaths as to pre-operative estimation of risk is given on Table 10.

TABLE X

Classification of Deaths following Spinal as to pre-operative Estimation of risks.

	No.	%
Good risks	2	3.07%
Fair risks	22	33.8%
Poor risks	33	50.8%
Very poor	8	12.3%

The deaths are classified according to sex and age by decades in Table 11.

TABLE XI

Table of Sex and Age by decades in the Sixty-five deaths in 2,122 Spinal Anesthetics.

	Males	*Females*
1-10	0	0
11-20	0	2
21-30	9	6
31-40	6	3
41-50	2	2
51-60	8	7
61-70	6	4
71-80	4	1
81-90	2	2
Unknown		1
	37	28

Spinal anesthesia is given in the subarachnoid space. Its physiological and pharmacological effects take place on the central nervous system. By means of these effects on the nervous system it affects secondarily the respiratory and circulatory systems, and also through its toxic effect after absorption into the blood stream. Therefore one would expect deaths in the spinal to be due to: 1. Paralysis of the vital centers from direct contact or depression of the vital centers by its toxicity in the circulating blood. 2. Lowering of blood pressure by one of the several mechanisms to which the fall in B. P. has been attributed beyond the ability of the heart

to compensate. [12 13 14] 3. Infection of the meninges or spinal cord through faulty technique on examining the table of deaths above. In examining the over mortality tables one will see that there were 9 to 12.6% of the 65 deaths due to myocarditis (myocardial failure) as compared with 12 or 16% with other anesthetics. There were 5 to 7.7% pneumonia deaths under spinal as compared with 5 or 6.6% under other anesthetics. There were 5 to 7.7% deaths attributed to thrombosis (two coronary, 2 femoral and 1 mesenteric) as compared with one coronary thrombosis under ether. The mesenteric thrombosis was pre-operative. This still leaves four thrombosis deaths under spinal as compared with one under general anesthesia. There were three deaths 4% from pulmonary embolism with general anesthesia to one death or 1.6% for spinal. I do not believe the anesthesias attributed to the thromboses or emboli. There were three uremia deaths to two for spinal or 4% to 3.1%. Novocaine has long been held harmless to diseased kidneys and I do not feel that these cases were contributed to by the spinal. There were two psychosis deaths with other anesthetics, one for spinal or 2.6% to 1.6%. Adding these deaths that might possibly have been due to or contributed to by the anesthetics we find that 21 or 32.3% were after spinal anesthesias and 26 or 34.7% after other anesthesias. The other causes of death are too remote to be considered due to the anesthesias. I think our figures speak for themselves that spinal is not more dangerous than other anesthetics. It is generally conceded a better anesthetic from the standpoint of the surgeon, due to its oft noted qualities of perfect relaxation, contracted intestines with the so-called "quiet abdomen," etc., which are a boon to any type of surgery below the diaphragm. We have not tried to prove anything but simply to offer our experiences with spinal anesthesia and allow the reader to deduct from them his own conclusions.

TABLE XII

Table of Anesthetics by years

	General	*Spinal*	*Avertin + Gas &/or Ether*	*Local*	*Regional*
1928		21			
1929	1330	165	10	280	20
1930	1137	402	61	303	37
1931	854	315	369	232	20
1932	986	447	340	266	29
1933	552	332	533	299	48
1934	370	440	608	348	19
Total	5229	2122	1921	1728	173

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THE STATUS OF IRRADIATION THERAPY IN BREAST CANCER

By J. P. Rousseau, M.D., Winston-Salem, N. C.

Cancer of the breast being today high in the list of causes of death in the female, its proportionate toll apparently increasing each year, makes it of far reaching economical and social importance, and among other considerations makes it paramount among the many problems confronting the medical profession today. It is hoped that these considerations offer justification for discussing, or perhaps reviewing certain facts about the treatment of breast cancer.

Today surgery and irradiation are our two main methods of treating cancer, and should only be used singly or conjointly after careful consultation with the family physician, surgeon, pathologist and radiologist, if the best interest of the patient is to be served.

Treatment of malignant tumors with roentgen and radium rays has reached the point today where it is possible to state with some assurance that certain tumors will respond favorably to the action of these agents and that others will not. For example, the basal cell and squamous cell epidermoids of the skin, lip, oral cavity, tonsil, larynx and uterus, the embryonic carcinomas of the testes, the hypernephromas and certain sarcomas are known to possess a relatively high degree of radiosensitivity. On the other hand, carcinomas of the oesophagus, stomach, colon and

urinary bladder are known to be radioresistant, and up until now but little has been accomplished by radiation treatment in this group of cases.

Breast carcinoma may be said to possess about the same degree of radiosensitivity as do the squamous cell cancers. Some of the important factors known to determine the response of a malignant tumor to radiation are as follows: First: Radiosensitivity of the tumor cells, which may to a certain extent be determined by microscopic examination. We know that the very cellular anaplastic undifferentiated and highly vascular tumors are the most malignant and the most radiosensitive, whereas the more differentiated desmoplastic tumors associated with the production of considerable fibrous tissue are less highly malignant and more radioresistant. This method of prediction of the sensitivity of a tumor is of value but subject to error. It is well known that sections taken from one part of a tumor may show the features of high malignancy and sensitivity, whereas sections taken of the same tumor from other parts will show just the opposite. For practical purposes it is essential that there be a difference in the tolerance of the cancer cells and the normal tissues harboring the tumor to permit the deliverance of a lethal dose of radiation to the cancer uniformly and at the same time preserve the integrity of the overlying skin and surrounding normal structures. Second: The accessibility of the tumor is another important factor in the treatment. It will determine the amount of radiation that may be delivered to the tumor. The proximity of a cancer to vital structures definitely limits the amount of radiation that may safely be given. Third: The extent of the disease is another important factor. Very large bulky carcinoma limits the ability of radiation to destroy the cancer cells in all its parts, because it is impossible to deliver the amount of radiation necessary without damage to healthy tissue and, too, it is often not possible to irradiate large tumors adequately and uniformly. Fourth: Certain tumors are so highly malignant that widespread dissemination and distant metastasis have already doomed the patient before attention is called to the existence of the local lesion. The end results, therefore, in treating cancer of the breast are materially affected by the type of cancer cells, the rapidity of growth, the degree of malignancy, the radiosensitivity, the presence or absence of metastasis, the regions involved, the duration of the disease, the age of the patient, the presence or absence of complicating diseases and the general state of health of the afflicted patient.

Diagnosis of breast cancer: In regard to the diagnosis of cancer of the breast, I feel that the radiologist can be of distinct aid and should be accorded the distinction of being a medical consultant. Radiologists cannot hope to attain this prominent role, however, unless they are willing to keep pace with the newer methods of clinical diagnoses and learn the symptoms and signs of cancer of the breast, and at least know something of the gross and microscopic pathology of breast tumors. We can always be of help in determining the extent of the disease, the presence or absence of metastasis to the chest or skeletal system by a careful radiographic

study of the lungs and bones. These regions should always be explored with the X-ray before operation is done. It is obviously needless mutilation to subject a patient to a radical mastectomy if involvement of these regions of the body has already occurred. The clinical diagnostic evidence of breast cancer may be absent, yet cancer may exist. On the other hand one or many of the following symptoms and signs of cancer of the breast may be present which are listed in their order of frequency and importance:

1. Single or multiple nodularity in the breast, usually not painful. The most frequent first symptoms is more often a single painless lump, but may be multiple and painful.
2. Loss of fat and increase of fibrous tissue which alters the normal contour of the breast with interruption of the arc, of the circle of the breast.
3. Fixation and dimpling of the overlying skin, giving rise to the so-called pig skin or orange peel skin.
4. Retraction of the nipple.
5. Reddening of the skin over the nodule, or skin ulceration.
6. The nodule is hard, not fluctuant or elastic to touch and immovable.
7. Bloody discharge from the nipple. (50 per cent being due to cancer.) (Adair)
8. Ulceration or eczematous areas in the nipple.
9. Enlargement or shrinkage of the breast.
10. Swelling of the arm.
11. Lump in the neck or axilla.
12. Pain in the arm.
13. Cough.
14. Loss of weight.
15. Neuralgic pains in chest and neck.
16. Pain in the back.
17. Anemia.
18. Cachexia, etc.

The latter symptoms being evidence, of course, of metastasic and advanced carcinoma.

The presence of one or a group of these signs and symptoms should cause a strong suspicion of cancer, or lead to the positive diagnosis of clinical cancer. If the clinical evidence above mentioned is insufficient on which to make a positive diagnosis, transillumination of the breast should be done and is of distinct value, though not always conclusive. In doubtful cases, the intelligent use of the punch or aspiration biopsy may make the diagnosis. If, after these tests have been made, doubt still exists, exploratory operation, with immediate frozen sections should be done. If there is still doubt from study of the frozen sections, the lesion is more likely to be benign. The wound should be cauterized, the incision closed and roentgen therapy given during the interval necessary for the preparation and study of permanent paraffin sections. Every physician should be

familiar with grouping and classification of breast cancer. The classification of Steinthall is the one generally accepted in American and European clinics, and is as follows: Group No. 1: The growth is confined to the breast with no clinical, microscopic or radiographic evidence of metastasis, and is definitely operable. Group 2: Cases with definite metastasis to the axilla, fixation to the pectoral muscles and showing involvement of the skin lymphatics, doubtfully operable. The tendency at present in some of the best clinics is to regard every case showing evidence of cutaneous involvement as inoperable. Group 3: Cases with or without axillary nodes, but with definite metastasis to distant parts of the body, as supraclavicular nodes, chest, mediastinum and bones; definitely inoperable. Group 4: Should include the postoperative, recurrent breast cancers which may in turn be divided into (A) cases of local recurrence only and operable and (B) cases, with or without local recurrences but with widely disseminated metastatic carcinoma, and inoperable. The first essential, therefore, in the treatment of cancer of the breast is the correct diagnosis and the proper evaluation of the above factors. The next essential is to determine and outline the best plan of treatment after consultation with the family physician, surgeon, pathologist and radiologist. In the early Steinthall group 1 and group 2, operable and doubtfully operable cancers of the breast, I am convinced that a thorough course or pre-operative roentgen therapy should be given in every case. It is also important that this treatment be given with an exact technique and with as meticulous care as is any major operation. We are convinced of its value and know that it is possible to accomplish the following changes in the tumor: First: In the highly malignant radiosensitive cancers, the entire tumor along with its axillary involvement is often made to completely disappear. In such cases, where there is a rapid and marked response to radiation, indicating a high degree of malignancy and radiosensitivity, and in which type surgery meets with most of its failures, some are of the opinion that such cases should not be subjected to operation at all, but that treatment be continued with radiation alone. Second: In the less sensitive group of breast cancer, pre-operative radiation will destroy many of the more sensitive cells, devitalize the more resistant cells and at the same time exert a restraining influence on the tumor by an indirect action known to develop in normal tissue as a result of radiation. It has definitely been shown that such changes occur in radiated cancer of the breast examined microscopically at the time of the operation and by animal experimentation. The value of this procedure is furthermore demonstrated clinically by the fact that post-operative recurrences and distant metastases are much less frequent and occur much later than in patients who have had no pre-operative roentgen treatment. Statistics from leading American radiologists such as Pfahler, Portman, Soiland, Christie, Quick, Lee, Evans, May and others, and from the clinics of Wintz and Keynes in Europe should be sufficient to convince the most skeptical of the value of pre-operative treatments, yet today, some surgeons will object to pre-operative

radiation of breast cancer on the ground that the procedure causes an unnecessary delay in the operation, during which time they claim the cancer may continue to grow, extend locally or metastasize. These men are either unwilling to admit a value for a procedure which they may think a competitor of surgery, or else have been observing cases in which radiation treatment is incompletely and improperly given. We may today assume, and rightly so, that nothing but good can come of a carefully planned and properly executed pre-operative course of roentgen therapy in primary operable cancer. I believe that it is best to carry out the operation six weeks from date of last treatment. Ample time should be allowed to obtain all the possible benefits from the course of treatment, and I have seen regression of the tumor continue for a period of six to eight weeks.

As to the post-operative radiation of breast cancer, which is the treatment most widely used, I feel that the benefits that accrue are less than from pre-operative treatments. It should be employed in all cases, and given with the same exactness and attention to detail as is the pre-operative treatment. Its use is based on the assumption that if radium and roentgen rays have the ability to kill the more sensitive cancer cells, that they will also have the ability to prevent recurrences after operation, by devitalizing the viable tumor cells, which might have survived the pre-operative treatment or escaped the surgical excision. As soon as the patient is out of the hospital and the incision healed, a post-operative series of 200 K. V. roentgen therapy is again given externally, using the saturation method of Dr. Pfahler, or its modification, the Coutard technique.

I know of no better way at present to emphasize the value of radiation treatment than to quote from leading surgeons and radiologists in charge of our best clinics. While often misleading and confusing and at times even erroneonus from one cause or another the following facts are well substantiated by study of statistical reports: First: The primary operable breast cancers, group I, treated by radiation only because of refusal of the patient to have an operation or because of poor general condition and extreme age of the patient, 81 to 100% five year recoveries have been obtained by Soiland, Pfahler, Keynes, Quick and May. In this same group of cases the best surgical reports show only an average of 70% five year recoveries. Second: Most cancers of the breast have progressed beyond the group 1, or operable stage, when first seen and are doubtfully operable. In this group surgery alone shows only 24.5% per cent five year recoveries, while in a similar group treated by combined surgery and radiation there were 37% five year recoveries. Dr. Pfahler in his large series of cases showed 46.5% five year recoveries in these doubtfully operable cases, or a gain of 90% in five year recoveries when radiation and surgery were combined. He also shows that in cases with no treatment at all 24% will survive the three year period. If complete operation is done, 29% live three years, and with combined surgery and radiation 66% will live three years. From these facts it seems, therefore, that with skillful surgery combined with proper pre- and post-operative radiation, the patient's

chances are nearly doubled. This accumulated experience of expert radiologists certainly justifies the extension of the status of radiation treatment in breast cancer to include the routine pre- and post-operative roentgen therapy of all cases. An outstanding fact is that 70 per cent of all breast cancers operated on without radiation treatment are dead at the end of five years. This fact is obtained from reports of the best surgical clinics in the world. In the face of such a gloomy picture from surgery it seems justifiable to press further the use of radiation treatment since its worth has already been proven and accepted, based on the results obtained in post-operative recurrent, metastatic and inoperable breast cancer.

I wish to review briefly the salient features of radiation treatment in this large and important group of breast cancers including the primary, inoperable, the post-operative recurrent and metastatic cases. In this group, radiation alone is of any value with the possible exception of the Blair Bell lead therapy, still in the experimental stage and of doubtful value. By proper radiation in these cases it is possible to cure a few of these otherwise hopeless patients, markedly prolong life in others and to palliate the distressing symptoms in all. Most of you, I am sure, have seen extensive primary inoperable cancer, local recurrent carcinomatous ulceration of the chest wall, skin pulmonary and bone metastases disappear and remain free of symptoms for months or years with proper radiation. In most of these cases it is not possible to effect a permanent cure, but in the majority, I believe it is possible to effect a marked regression of the tumor, prolonged growth restraint and prolongation of life with freedom from symptoms.

The primary inoperable cancers without distant metastasis but with extensive involvement of the breast, axillary and supraclavicular involvement, should be given a complete course of roentgen therapy using multiple ports, to cover adequately all the involved areas. Six to eight weeks following the roentgen treatments any residual tumor left in the breast, should be implanted with highly filtered radium element needles after the method of Keynes in London. Following this, further external radiation to the axilla and neck will depend on the integrity of the skin, care being taken at all times to prevent late X-ray sequelae. Metastatic lesions in the bones and lungs are treated with external roentgen radiation alone, giving the maximum dose through as many cross fire fields as possible by the saturation method of Pfahler. In regard to the use of radium, I am convinced that its use in conjunction with external roentgen therapy is of marked value. It should be used in small quantities of highly filtered radium element needles and distributed uniformly throughout residual tumor masses in the breast or in the nodes. It is of more value locally because of its more intense local action on cancer cells and should be used for this purpose only. The roentgen rays should be used for their wider and deeper effects. Recent progress in the use of roentgen rays by higher voltage and heavier filtration may eventually supplant the use of radium, but until more definite reports are available I believe we should continue

to use radium needles interstitially in the tumor for its more intense local action after pre-roentgen therapy is completed. An advantage of the radium element needles over the use of gold implants or radon seed, is that the radiation from these needles is of equal intensity throughout the time of radiation, whereas with the radon, the maximum dosage is obtained within the first few days, the intensity decreasing proportionately each day. The second advantage of the needles is that the radium salt is equally distributed throughout the length of the needle which is much longer than the small seed and, therefore, it is much easier to uniformly radiate a large tumor with the needles than with the small seed.

The actual details of the technique in applying the roentgen dose in cancer of the breast is purposely omitted from this discussion, because it is evident that none but the trained therapist need be concerned with these details. In passing I wish to emphasize that the mere possession of X-ray equipment does not qualify one to give X-ray treatment in breast cancer any more so than the purchase of a complete set of surgical instruments qualifies one to do surgery. In my opinion it requires just as much skill and attention to details to properly irridate breast cancer as it does to perform the classical operation.

The following are some of the improvements in radiation technique which have come about in the past decade and should be employed in treating all cancers. First: A change to the protracted fractionated dosage according to Coutard, which is essentially the giving of small fractional daily doses of X-ray over a period of three or four weeks time, instead of the single massive dose given in a short period of time. Its main advantage is a larger dose, probably three to five times the amount to the tumor, which was formerly possible to give by the single dose method, without permanent and irreparable damage to the skin and surrounding normal structures. Another advantage of this technique is the continuous saturation of the tumor bed over a period of three to five weeks time, thereby assuring one that all the tumor cells will receive adequate radiation during the pre and mitotic stages of cell division when it is known that the cells are most sensitive to the action of the X-ray. A second great improvement has come about through the use of much higher voltage with greater filtration of the X-ray beam and a greater distance from the target of the X-ray tube to the patient's skin. All of these changes tending to give a more homogeneous beam of radiation with greater penetration. This results in a proportionately larger depth dose to deep seated tumors, with less absorption of the ray in the superficial and overlying normal structures, and consequently less damage to these structures. Unless these fundamental basic principles are being employed in radiating breast cancer, with careful attention to all technical details, improper dosage will be given to the tumor and poor results are bound to obtain.

If one is not willing to take the pains to give X-ray treatment as it should be given, I believe it better to forego the radiation, and rely entirely on good surgery. Poor irridiation is just as hazardous as poor surgery.

SECTION ON GYNECOLOGY AND OBSTETRICS

Dr. E. C. Hamblen, Durham, *Chairman*

UTERINE BLEEDING

By Dr. Geo. Johnson, Wilmington, N. C.

The uterus is the only organ in the body from which there is a physiologic loss of blood. Variations from the normal in this loss must be looked upon with pathological significance. In determining whether the loss is abnormal or not a careful history must be taken. Routine questions should be asked as to the beginning of puberty, date of last menstruation, length of each menstrual period, the irregularity and duration of the interval, the absence or presence of pain and the amount of blood lost. Of the latter you must estimate from the patient's statement, as they differ according to their personal cleanliness. If excessive flow is noted inquiry should be made as to when it first began to be excessive. Did it follow marriage, childbirth or pelvic inflammation or does the patient recall anything that she thinks is of significance before making a physical examination.

The earliest uterine bleeding is from the new-born, which is probably due to the influence of a hormone from the placenta; this is without pathological significance.

Uterine hemorrhage has long been divided into a menorrhagia, meaning an excessive flow recurring at regular intervals with no appearance of blood between the intervals. (B) Metrorrhagia, referring to hemorrhage irrespective to the normal periods and occurring independently of menstruation. All metrorrhagia is pathological and must always be regarded in a serious light.

Novak divides uterine hemorrhage into (a) functional with no demonstrable pelvic lesion. (b) Anatomical, in which there is a definite lesion in the pelvis. (c) Constitutional. The most important of the constitutional diseases are: Chlorosis, occurring in young girls characterized by a marked dimunition in the hemoglobin, but not in the red cells. The treatment for which is iron. Hemophilia; this disease is most common in the male, but can occur in the female. There are two types—familial—in which the blood is vicious and a predominance of mononuclear cells. Sporadic—in which there is a marked delayed coagulation time. The treatment is transfusion, serum and calcium. Thrombocytopenic purpura hemorrhagica, the cause of which is thought to be a dysfunction of the reticulo-endothelial cells. In this disease there is a marked dimunition of the blood platelets. X-ray therapy is probably the best treatment.

Syphilis, diabetes, tuberculosis and chronic valvular heart diseases may cause excessive bleeding, also they may cause amenorrhea.

Functional bleeding is most apt to occur in the middle period of life, although it occurs fairly frequently in adolescence and at the menopause. Pain is not a common symptom. Sterility is the rule, and anemia is common.

Histologic examination usually shows a hyperplasia of the endometrium. The epithelium is nonsecretory in type. Of the greatest importance is the disparity in the arrangement of the glands, called by Novak the "Swiss cheese pattern." The most plausible theory as to the cause fo functional bleeding is that it is due to an absence of the corpora lutea and a persistence of unruptured follicles. Thus the patient gets a continued effect of the theelin or folliculin hormone and no progestin, which is probably due to an unbalance of prolan A & B of the anterior pituitary. The diagnosis of functional bleeding is made by curettage and microscopic examination of the uterine scrapings.

The Treatment. Some of these cases correct themselves spontaneously. Nevertheless we should keep in mind the ever-present possibility of malignancy. Currettage gives the quickest relief and it also gives us a chance to establish the diagnosis. If anemia is marked a transfusion should be given. After the diagnosis is established antuitrin-S may be given in daily 200 rat unit doses for a few days. If it does any good it will probably have to be repeated. I have obtained benefit from this therapy in a few cases. From present reports it seems that snake venom therapy, as reported by Peck and Goldberg, is going to be of value. I have had no experience with this. If the patient is past her late thirtys X-ray or radium is the ideal treatment. In young girls when curettage or endocrine therapy neither do any good the problem is quite perplexing. In these cases I use a very small amount of radium, three to four hundred milligram hours, using only about 15 milligrams in the uterine cavity. My experience with this in a few cases has been very satisfactory.

Of the anatomical causes of uterine bleeding, cancer is the most important. Cancer of the cervix may be of the squamous variety, which grows on the vaginal surface of the cervix, or adeno carcinoma which develops most often in the cervical canal. Most frequently this bleeding begins with a spotting and there is often an associated leukorrhea. When the ulcerated process becomes more advanced bleeding becomes more persistent and profuse.

Cancer of the body is usually an adeno carcinoma and occurs most often after the menopause, but can occur during any part of the reproductive age. Post-menopausal bleeding that is abundant is so often caused by adeno carcinoma that Sampson advocates major operative procedure without diagnostic curettage. Benign polyps very often cause uterine bleeding, especially the cervical type. The corporal type very often protrude from the cervix and then they cause severe bleeding. Uterine myomas may cause severe bleeding especially the sub-mucous type. The sub-serous type often cause very little bleeding. Retained gestational products is probably the most common cause of uterine bleeding. If the

history does not suggest this cause a diagnostic curettage with examination of the scrapings will practically always reveal the true cause. In hydatidiform moles the evacuation of the characteristic grape-like material at once suggests the diagnosis. In these cases the Friedman or Ascheim-Zondek test should be made to rule out chorionepithelioma.

In extra uterine pregnancy bleeding does not usually occur except a slight staining until the fetus dies. Most of these diagnoses are made after rupture of the tube and most of this bleeding is internal.

Tumors of the ovary usually do not produce much effect upon menstruation with one exception and that is the granulosa cell carcinoma. This occurs most often after menopause. In these cases there is found after menopause a distinct hyperplasia of the endometrium and when this endometrium is found, even if the tumor cannot be palpated, a granulosa cell carcinoma should be suspected. Tubo-ovarian abscess or a very bad salpingitis may cause excessive bleeding. Cervical erosions that are vascular may cause spotting and in these cases a biopsy should be made to be sure that it is not a beginning carcinoma.

Mild bleeding after the menopause is sometimes due to a senile atrophy and vaginitis. This with a leukorrheal discharge may closely simulate a beginning carcinoma. If there is any question a biopsy should be made to determine the exact cause. In anatomical uterine bleeding the treatment is to remove the cause.

In the reproductive age a woman having excessive bleeding should be suspected as most likely having retained gestational products, uterine fibroid or pelvic inflammation with abscess formation. After the menopause bleeding is indicative of carcinoma of the cervix or body, polyps or degeneration of a uterine fibroid.

DISCUSSION

Dr. Robert Thrift Ferguson, Charlotte, N. C.: The few remarks that I shall have to make will be confined to conditions that cause bleeding independent of child-bearing, which I shall call gynecological bleeding. Cullen has classified these very briefly and accurately as follows: "(a) Hemorrhage due to constitutional disease; (b) hemorrage due to benign changes of the mucous membrane of the cervix, as well as the uterine body; (c) hemorrhage due to benign tumors of the uterus, cervix or body; (d) hemorrhage due to malignant disease of the cervix and body of the uterus; (e) hemorrhage due to functional disturbances of the uterus and ovaries, and (f) hemorrhage due to pathological states of the adnexa."

The first and most important essential in solving the puzzle in every uterine hemorrhage is not what the treatment shall be but first of all what is the etiology of the present pathology. A guess is useless in uterine hemorrhage as well as in any other pathological condition of the human body. Make your diagnosis first and then consider your treatment. In the adult the first and most important question to settle is, is it malignancy? In the adolescent type we want first to know is it idiopathic. In my humble

opinion the only way to settle this is by a curettage and pathological examination of the scrapings. After a complete physical examination to rule out tumors and inflammatory conditions of the uterus and adnexa, a study of the glandular organs and the body excretions, the patient is told that a diagnosis is the first essential and can only be made by curetting and pathological examination of the tissues removed. This having been accomplished you have placed yourself upon a firm foundation for future medical or surgical treatment. Treating a hemorrhage per se is pure folly as you are only treating the symptoms and not the cause.

It has been an inviolable rule in my practice never to treat any patient for any condition whatever until I have made a satisfactory examination and a diagnosis, if possible for me to make one. Failing in a diagnosis I ask for consultation or refer the patient to someone else, for I have no desire to accept remuneration for treating a patient on whom I have been unable to make a diagnosis. Many a time a husband has come to my office and asked me to give him a prescription for his wife who has been bleeding for some time. My reply has always been that it can't be done; if you will bring your wife to my office and let me make a thorough examination and try to find the cause of the bleeding then I will be glad to do what I can to relieve her. Frequently they will say: "Doctor, my wife has been bleeding for some months and I have tried several doctors and they have not done her any good and I would like for you to send her some medicine." My refusal has been prompt. In my experience drugs have very small place in gynecological hemorrhage. The curette and iron have been my main weapons in the idiopathic cases, and the curette and other surgical means where you can locate the cause.

Hormonal treatment of uterine hemorrhage in my hands has been almost universally disappointing. The study of hormones is one of the most fascinating avenues in gynecology and I believe the day is not far distant when the etiology will be so simplified that most, if not all, of the idiopathic hemorrhages will be relieved by hormonal therapy. Most of my cases of idiopathic hemorrhage have been in girls at or near puberty, and I have only failed to cure one by the use of the curet and iron. In the idiopathic cases in adolescents X-ray therapy and radium have practically replaced surgery after the diagnosis has been made with the curet. Where there is pathology the knife is first choice, but without pathology I hesitate to rob a woman of her most potent organs.

Idiopathic or functional uterine hemorrhage is often met with at puberty and in adolescence, the most important periods in a woman's life. The condition is probably due to the failure of the graafian follicle to complete its cycle. Pituitary, thyroid and ovarian extracts have their places. Hemorrhage at any age is a danger signal; the older the patient the greater the danger.

SELECT TREATMENT OF BENIGN DISEASES OF THE UTERUS

By Dr. B. E. Rhudy, Greensboro

There probably will always be conflicting views between the various groups of physicians as to the best method of treating benign diseases of the uterus, at least there has been up to the present time; principally, I believe, due to the lack of proper understanding as to just what results should be expected, as well as proper selection of cases.

In doubtful cases in which definite diagnosis is seemingly impossible before treatment is begun, there will always be a divergence of opinion as to what therapy should be administered. In the general hospitals of this country, it is admittedly true that a large percentage of the cases which are diagnosed as fibromyomas are treated surgically.

Fibromyoma of the uterus is the most frequent gynecological condition encountered. Ewing, in his publication on neoplastic diseases, states that 50% of all women over 50, and 20% of those over 25 years of age have fibromyomas. This would indicate that probably one-third to one-half of women reaching the age of 45 have this condition.

The fact that a fibromyoma is present does not necessarily mean that treatment is indicated; in many instances the fibromyoma is small and is not producing symptoms. On the other hand, if the patient is suffering from menorrhagia or from pressure symptoms, threatment is indicated. In these cases two types of treatment are available: surgery or irradiation. In deciding on the type of treatment to be given, one should carefully select the cases, as there are certain advantages, one over the other.

Our interest rests chiefly in irradiation, and while my experience has necessarily been limited to a relatively small series of cases, it does cover a fair cross section of fibromyomas, large and small, both in married and single women ranging from 25 to 52 years of age; also climacteric bleeding cases, the results having been so universally satisfactory that I am encouraged to present this paper with the hope that I may contribute something to a more open and fair-minded discussion of the subject, resulting in a more judicious selection of cases for hysterectomy.

There is an abundance of literature upon the subject, both by European and American authors, who in some instances report large series of cases where satisfactory results are obtained in 90 to 98% of the cases treated. Dr. Pfahler began treating these cases are early as 1906 by irradiation.

In the European countries, especially Germany, irradiation is extensively used. Dr. Francis Carter Wood in an article in the Journal A. M. A., emphatically states that many uncomplicated fibromyomas are still being removed surgically which could perfectly well be treated by roentgen irradiation.

The advantages of X-ray treatment of these uncomplicated cases are:

a. The lack of risk.

b. The universal availability of roentgen rays.

c. The more homogeneous effect over that of radium, especially of the larger fibroids.

d. The control over the exposure of the ovaries.

e. Treatment can usually be given without interfering with the patient's occupation.

f. Is less expensive, and hospital costs are eliminated.

g. The results are obtained more gradually than by either surgery or by radium.

h. Nervous shock and discomfort, as well as any objection to intra-uterine application is avoided.

i. It does not produce any caustic action on the endometrium or any cicatrical tissue formation or possible cervical stenosis.

It is possible to treat uterine fibroids by roentgen rays without affecting the ovaries as is shown by a case reported by Dr. Pfahler some years ago, as follows:

Patient age 24 came to me on the day of her wedding anniversary; she had just been operated on for the removal of a fibroid, but found to be five months pregnant. The fibroid was the size of an orange, growing from posterior wall filling the hollow of sacrum. Family refused hysterectomy. One week later she aborted a monster; some weeks later she was referred for irradiation. Knowing the location of the fibroid, the field was limited to the area, and the tumor disappeared completely. Patient did not stop menstruating. Since then she has given birth to two healthy children which have remained healthy.

This case is particularly interesting because of the action on the fibroid without affecting the ovaries; also because the monster was born before any irradiation was given. He also reports another case in which a fibromyoma the size of a grapefruit was irradiated. This was followed by a period of amenorrhea for one year. She gave birth to a normal healthy child four years after treatment.

One must always consider pregnancy in a woman with an enlarged uterus, or where there is bleeding; also malignancy. Therefore, careful history taking, and examination by a competent and experienced physician is paramount. If this is done, most cases of carcinoma will be ruled out.

Careful X-ray study with or without uterine injection frequently will eliminate the necessity of curettage. Roentgen irradiation is not contra-indicated where there is inflammation in addition to a fibroid.

Masson in reporting from Mayo Clinic and Kelly of Baltimore reports an incidence only of two to three per cent carcinoma with fibromyoma. Dr. Ewing states that in twenty years he has encountered only three cases of malignant uterine myomas with general metastasis.

Nothing has been presented to show that malignant degeneration ever occurs as the result of irradiation. On the other hand it has been

definitely pointed out that the incidence of carcinoma or sarcoma of uterus having been treated by irradiation is less than the general incidence of the condition for the same age period in women generally. Therefore, it would be illogical to state that all these cases should have had hysterectomy.

Incidences of malignancy of the uterus is only slightly greater than the operative mortality of the best surgeons performing hysterectomy, and the incidence of malignancy of the uterus treated by irradiation is less than the operative mortality of unselected patients upon whom hysterectomy is performed. Therefore, surgical treatment because of the possibility of subsequent malignant degeneration is injudicious.

McFarlane reported in Am. Jour. Obst. & Gyn. that a review of the literature up to 1930 disclosed only seven articles in which 29 cases of malignant degeneration following irradiation was reported. Werner of Vienna, on the basis of 2,680 patients treated by radium or roentgen rays for myomas or climacteric bleeding, reported an incidence of 0.3%.

Since carcinoma of the uterus occurs in approximately 5% of all gynecological cases, and in only 0.3 to 0.4% of irradiated cases, irradiation obviously affords a distinct protection against its development.

It is absolutely essential in treating these cases that you obtain the confidence and coöperation of the one referring the case. In my experience, this is usually the family physician or clinician.

SUMMARY AND CONCLUSION

1. A review of the literature reveals many thousands of cases of nonmalignant uterine diseases are treated by irradiation with approximately 95% cures. "Cure" meaning relief from hemorrhage and relief from other symptoms such as that caused by pressure. Therefore irradiation seemingly should be the method of choice in practically all cases. There is absence of shock and after effect incidental to the removal of a woman's genital organs.

2. Absence of any mortality with roentgen ray irradiation.

3. There is a high percentage of relief obtained.

4. Economical advantage is considerable. Hospitalization is unnecessary.

5. No contra-indication because of any constitutional disease such as diabetes, tuberculosis cardiorenal disease or marked enemia.

6. A fair and open-minded discussion of radiation therapy from an unbiased and scientific standpoint will undoubtedly do much toward the recognition of radiation therapy as one of the foremost and acceptable methods of treatment of benign uterine diseases, bearing in mind always certain qualifications as herein has been cited.

CANCER OF THE CERVIX—ITS FORERUNNING PATHOLOGY AND PREVENTION

By Ivan Procter, M.D., Raleigh, N. C.

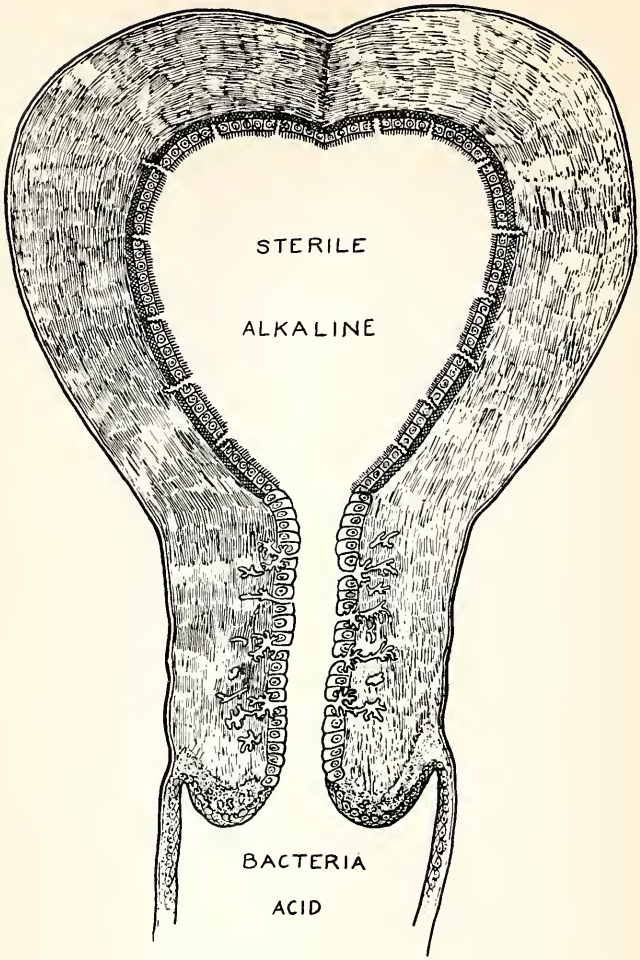
We make no apology for the repeated presentation of this common, but very important subject of Cancer of the Uterine Cervix, for its increasing frequency and mounting mortality makes it deserve the respect and attention of every physician in all of the branches of the profession. Each thorough study of the disease more firmly convinces us of the possibility of making an early diagnosis in the majority of patients and that an increasing number of physicians are alert to make this diagnosis. In our opinion another group of physicians are now going a step further and preventing this death-dealing disease by the eradication of its forerunning pathology. It seems to us that the problem of cancer of the cervix can be more quickly and efficiently controlled by a simple but clear understanding, especially on the part of the general practitioner of the anatomy and physiology of the parts involved and the apparent etiology and pathology of the disease itself. With this in mind let us review for a few moments the anatomy.

The cervix is the lower constricted portion of the uterus extending from internal to external os. The canal is three centimeters in length and is covered by a mucosa which contains many compound racemose (multiple branched glands). The anatomy here is important from the standpoint of malignancy for it differs from many other parts of the body in that there is no intervening basement membrane between the mucosa and muscular layer. "The glands penetrate deep into the cervical muscle and in the case of cancer the normal physiologic contraction and relaxation of the uterine musculature may squeeze off a few malignant epithelial cells into a blood vessel or lymph channel resulting in an early and fatal metastasis." The mucosa is lined with columnar epithelium that changes into cuboidal at the internal and stratified squamous at the external os, the latter covering the vaginal portion of the cervix.

"Microscopically, the cervix is composed of connective tissue intermingled with involuntary muscle fibers between which there is a small amount of elastic tissue that gives the organ its distensibility."

"The supra vaginal portion of the cervix is attached to the bladder by fibrous tissue that extends out into the broad ligaments to form the parametrium. The lymphatics begin abundantly in the cervix, pass upward to surround each bundle of muscle that goes to make up the myometrium. They collect in vessels on either side of the uterus to follow the uterine and ovarian blood vessels through the base of the broad ligaments to enter the hylum of the ovary. They also follow the utero sacral ligaments and along the ureters to the lumbar glands."

The function of the cervix is to act as a portal of entry to the more important uterine and peritoneal cavities and to maintain the integrity of the uterine cavity during gestation. The many branched tortuous glands



of the cervix pour out a clear alkaline mucus that plugs the cervical canal and acts as a barrier against invading organisms. These glands can readily be compared with the tonsils, both of which sacrifice themselves before the invading pathogenic bacteria in an effort to safeguard the more valuable organs of the body. Both the glands of the throat and cervix have a definite function in life and should be preserved until they become pathological.

Bacteria (staphlycocci and streptococci) normally present in the vagina gain entrance to the cervical tissue and glands through breaks in the epithelial covering as a result of sex trauma, instrumentation, abortions and labor.

"The most common pathological condition produced in the cervix is the so-called erosion. The infection that gains entrance causes a peri-

glandular and sub-epithelial round cell infiltration. The latter lifts the epithelial coat from the normal bed and the former stimulates the glands to over-activity. An abundant secretion of alkaline mucus flows down and out the external os on to the less stable stratified squamous epithelium, keeping it bathed in alkaline mucus instead of the normal acid vaginal secretion. This causes a sogginess and maceration of the squamous epithelium and together with the round cell infiltration, destroys the epithelium, leaving temporarily a true erosion. But the bacteria that destroys the squamous epithelium only stimulates the columnar to grow. The cervical mucosa then grows down and out the external os on the vaginal portio, carrying its normal ability to produce branched glands which penetrate the cervix in their new field. Once bacteria invade the cervix or erosion develops, there is but little tendency to self-healing and the condition continues. After a lapse of time in certain patients the infection seems to grow less virulent resulting in a lessening of the amount of secretion from the cervical canal and reduction in the inflammatory reaction of the cervix itself. Now the cervical epithelium which normally lives in alkaline mucus is bathed in a slightly acid secretion, this hinders the growth of the glandular epithelium and allows the proliferation of the stratified squamous which replaces the columnar by growing in toward the external os from its nearest border. As this new epithelium covers the area of erosion it plugs the mouths of the new formed glands and nabothian cysts are formed." Occasionally the epithelium grows down and completely fills the gland cavity. If a biopsy is taken at this point, microscopically we will see squamous epithelium far below the surface and the unfamiliar microscopist may mistake this for a malignancy when it is benign and represents a so-called healed erosion.

When the entire surface of portio is covered with squamous epithelium, the erosion is said to be healed. But this does not mean that the cervical infection has been eradicated. As a matter of fact, there is but little tendency on the part of erosion to heal itself. The cervical glands once infected, have a natural tendency to remain infected unless definite and radical steps are taken to drive it out.

"This chronic infection produces a constant irritation of the cervical tissues, resulting in glandular over-growth and interstitial hyperplasia, which we find in certain cases to be only a short step from the disorderly arrangement seen in malignancy." (Mathews)

Ewing states that erosion is the most definitely established lesion known to initiate cervical cancer and that chronic catarrhal endocervicitis precedes it in the great majority of cases.

Bailey of Manchester, England, in an exhaustive study of cervical erosion (994 cases), found it a constant forerunner of cancer.

CASE REPORTS

Summary of history, examination, laboratory, and pathological diagnosis. Description of microscopic findings:

Case 1: Mrs. H. L., age 27, November 6, 1934. No. 9,923.

Para 1. Menstruation 28 days in interval, duration four to five days, regular.

Complaint on Admission: Profuse leucorrhea.

Physical Examination: Lacerated perineum. Anterior vaginal wall lacerated with a cystocele present. Deep bilateral laceration of the cervix with a plus one erosion and bleeding on contact. The anterior lip of the cervix is adherent to the anterior vaginal wall. There is acute tenderness throughout the pelvis. The uterus is retroverted.

Laboratory: Negative.

Treatment: Anterior and posterior colporrhaphy with amputation of the cervix.

Pathological Report Cervical Biopsy: Chronic endocervicitis.

Microscopic Description: The section shows a normal squamous epithelial covering with two short breaks in the epithelium. At a distance to the right the interstitial tissue begins to show hyperplasia and new formed blood vessels. There is a round cell infiltration and a thickening of the squamous epithelium until it becomes double the normal depth.

Case 2: Mrs. D. C., age 29, October 8, 1934. No. 9,859.

Catamenia at 14 years. Married 12 years. Para 5. Menstrual periods 28 to 30 days in interval; duration one to three days with pain in the lower abdomen and scanty flow.

Complaint on Admission: Backache and leucorrhea for two years, accompanied by bearing down sensation.

Physical Examination: Vulva gapping, cystocele, rectocele and hypertrophied and cystic cervix with bilateral lacerations and erosion. Uterus is slightly enlarged and tender to manipulation. There is thickening and tenderness in the right adenexa and some thickening in the left adenexa.

Laboratory: Negative.

Treatment: Hysterectomy.

Pathological Report: Chronic endocervicitis; fibrosis uteri.

Microscopic Description: The section shows slight thickening of the squamous epithelial coat which is intact. Interstitial hyperplasia. Break in the epithelial covering with subepithelial round cell infiltration and thickening of the squamous coat.

Case 3: Mrs. F. A., age 41, December 21, 1935. No. 10,005.

Catamenia at 14 years. Married 19 years. Para 7. Gravida 9. Periods of irregular intervals, duration about seven days with profuse flow.

Complaint on Admission: Pain in left side and profuse bleeding at the time of her periods. Present since the birth of her last child, eight years ago.

Physical Examination: Multiparous outlet, and old second degree laceration. Cervix is large, gapping, eroded and bleeds easily. There is an

old laceration into the broad ligaments on the left. The parametrium on the left is thickened and boggy.

Laboratory: Negative.

Treatment: Hysterectomy.

Pathological Report: Fibro-myoma of the uterus; chronic endocervicitis.

Microscopic Description: Normal squamous covering; dilated glands. New squamous epithelium representing a partially healed erosion. New formed glands near the surface covered by a new growth of epithelium. There is periglandular round cell infiltration; other glands open on to the surface. Columnar epithelium covers a part of the surface.

Case 4: Mrs. R. S., age 39, March 9, 1935. No. 10,163.

Catamenia at 13 years. Married 20 years. (Married twice.) Para 4, with instruments used for two of her deliveries. Sutures were required. Menstrual periods 28 days in intervals; duration five days; pain in lower abdomen.

Complaint on Admission: Pain and tenderness in lower abdomen and back. Present for eight years and aggravated at the time of her periods; also leucorrhea.

Physical Examination: Tenderness over the lower midline and the right lower quadrant. The perineum shows an old laceration. Bilateral laceration of the cervix, erosion plus 3; leucorrhea plus 3. Uterus large, hard, anterior, movable and tender. The adenexae are thick, firm, and tender.

Laboratory: Negative.

Treatment: Sturmdorf amputation of the cervix.

Pathological Report: Chronic cystic endocervicitis.

Microscopic Description: Glandular overgrowth; interstitial hyperplasia. Nabothian cyst. Marked round cell infiltration. Marked subepithelial and peringlandular round cell infiltration.

Case 5: Mrs. E. V., age 42. January 10, 1934. No. 9,440.

Catamenia at 15 years. Married ten years; no children. Menstrual periods 21 to 28 days in intervals; duration five to seven days with cramps.

Complaint on Admission: Vaginal bleeding for seven days and required four vaginal pads daily which were well soaked; also leucorrhea.

Physical Examination: Small cystic ovary on the right; fibrotic ovary on the left. Nulliparous outlet. Slight transverse enlargement of uterus.

Laboratory: Essentially negative.

Treatment: Dilatation of the cervix under spinal anesthesia. Fibrous internal os. Walls of the uterus were hard and rough. Two polyps removed 6x3 millimeters in size. Received intrauterine radium.

Pathological Report: Chronic hypertrophic endometritis.

Microscopic Description: This slide shows normal squamous coat. Elevation of the epithelium at points apparently separated from the

interstitial tissue at its basal layer; complete loss of squamous epithelium. Sub-epithelial round cell infiltration marked. Schiller test positive due to loss of squamous epithelium. There being no cells containing glycogen the iodine reaction was absent. Biopsy proved the condition to be benign.

Case 6: Mrs. L. E., age 50, March 25, 1935. No. 10,189.

Catamenia at 14 years. Married 12 years. No children and no contraceptives. Menopause at 45 years, since which time there has been an occasional slight spotting.

Complaint on Admission: Profuse vaginal bleeding for three months.

Physical Examination: Nulliparous outlet. Free bleeding on contact with the posterior cervical wall; papillomatous, irregularity over the cervical wall and extending to the vaginal walls. The cervix has a large, hard rim and is twice the normal size. The induration extends into the vagina.

Laboratory: Negative with the exception of a sedimentation time of 23 minutes, and 4 plus pus in the urine.

Treatment: 6,945 milligram hours of radium to the cervix and vagina, followed by deep X-ray therapy.

Pathological Report Cervical Biopsy: Carcinoma, Grade II.

Microscopic Description: A thickened, but apparently normal epithelial coat. Interstitial tissue below shows marked round cell infiltration. Large blood vessels and epidermoid carcinoma. Schiller test at this point was negative due to the iodine stain produced by squamous epithelium, but cancer existed below showing importance of thorough and complete investigation of the cervix. The second piece of tissue removed from the point where Schiller test was positive. The slide at this point shows loss of squamous epithelium. Round cell infiltration and epidermoid carcinoma below.

Case 6: Second biopsy.

Microscopic Description: Slide shows thickened layer of squamous epithelium with finger like projection. Subepithelial round cell infiltration. A complete break in the squamous epithelium then definite malignancy with an oblique line of epithelial cells.

Case 6: Third biopsy.

Microscopic Description: Beginning at the left side of the slide we see marked round cell infiltration; new blood vessels; hemorrhage; granulation tissue. Moderate thickening of squamous epithelium then reduced in depth of epithelial coat which looks fairly normal, but below there is interstitial hyperplasia. Moving to the right we see a sudden and frank change from fairly normal squamous epithelium to well developed epidermoid carcinoma. This cervix showed negative lugol to the left with a sharp line of demarcation and positive lugol to the right.

Note: Lugol refers to Schiller Test.

Case 7: Mrs. M. T., age 32, August 5, 1934. No. 9,743.

Catamenia at 14 years. Married 15 years. Para 2. Gravida 3. One miscarriage. Menstrual periods 28 days in interval; duration three to four days and regular.

History of trauma to left vulva two years previous.

Complaint on admission: Pain in the left side and leucorrhea, but no bleeding.

Physically appeared chronically ill. Cervix showed a bilateral laceration, erosion, eversion, infection and sloughing of the anterior lip. Adnexae normal.

Laboratory: Wasserman 4 plus two years previous. She received 20 intravenous neoarsphenamine treatments. Wasserman 2 plus one month before admission and on admission.

Treatment: 6,630 milligram hours of radium to the cervix and vagina, followed by deep X-ray therapy treatments anterior and posterior, twelve minutes each.

Pathological Report Cervical Biopsy; Epidermoid Carcinoma, Grade III.

Microscopic Description: This section is removed from cervix of a patient suffering from syphilis; plus 4 Wasserman. There was chronic endocervicitis; erosion; eversion, which bled fairly easily on touch. The patient's age was 32 years. Biopsy showed well developed epidermoid carcinoma. Microscopically there is variation of size and shape of cells, prominent mitosis anaplasia and hemorrhage. Schiller (lugol) test in this patient was not done on account of apparent erosion covering almost the entire surface of the portio and the Schiller test is not applicable to erosion (columnar epithelium). The extent of the cervical disease however prompted biopsy which proved malignant.

CLASSIFICATION AND TREATMENT OF PATHOLOGY PRECEDING CANCER OF THE CERVIX

Diseases of the cervix, the result of lacerations and infection, can be well grouped under the general term of Cervicitis. For once infection takes place if it be allowed to become chronic, all parts of the cervix seems to be involved,—the epithelial covering, the mucosa, glands and interstitial tissue. Local treatment in the form of tampons or medication seem to do little, if any, good, for the medication cannot reach the deep-seated infection. Systematic and radical measures are usually necessary to drive out the infection.

We have found it helpful to classify the diseases for treatment into four groups:

1. The usual post-partum cervix with slight laceration and erosion. This group is best treated with the thin flat tip nasal cautery making radial or linear incisions through the affected area. If the entire mucosa is involved then make lineal incisions from internal to external os. If the

infection be deep-seated make a deep crucial incision with a heavier blade and radial incisions with the thin blade.

2. The second group includes the simple laceration of the cervix early in the post-partum period before there is evidence of infection. These can often be healed by simple trachelorrhaphy.

3. Those cases of laceration, erosion and longstanding, deep-seated infection are best treated by removing the grossly diseased portion of the cervix and gland bearing area up to the internal os. The technique as suggested in the Sturmdorf tracheloplasty seems to give the best results in these cases for it preserves the circular muscle of the cervix.

4. Those cases of extensive disease including laceration, eversion, erosion, hypertrophy and cystic degeneration, especially if there be multiple strictures of the canal, require high amputation or hysterectomy.

A word of caution should be spoken about cauterization. This is a surgical procedure and should be treated strictly as such. There have been deaths reported following apparently simple cauterization. We must remember that often there are streptococci present in the vagina and cervix; that the cautery blade, like a knife, opens lymph spaces and blood vessels that may transmit bacteria to the pelvis or peritoneum. Three pelvic abscesses have been reported by the Mayo Clinic after cauterization and we have had one.

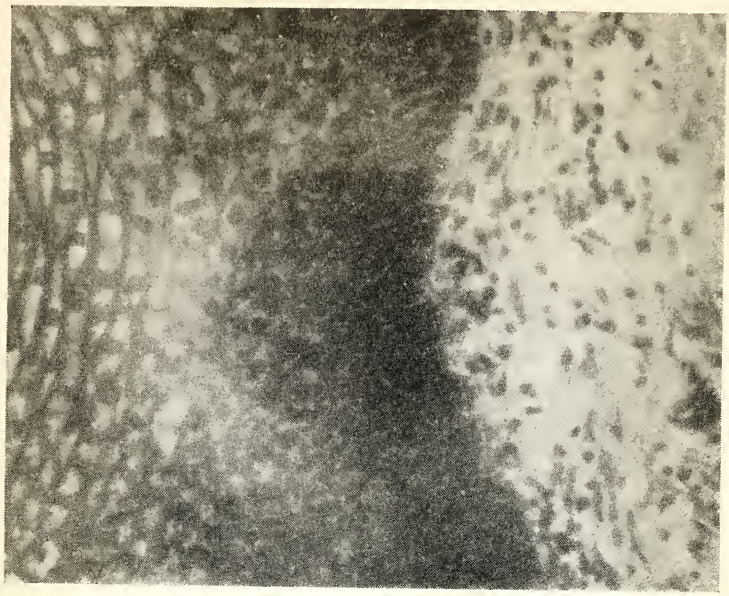
Although the above treatment can be classified as prophylactic steps against cancer of the cervix, there are other steps that should be universally adopted to prevent this forerunner pathology.

1. All physicians whether they be interested in surgery, gynecology, obstetrics, or in eye, ear, nose and throat, or in any other branch of medicine and surgery, should enter into the important campaign of protecting the child-bearing woman against cancer of the cervix. Physicians should begin at home by advising their mothers, sisters, wives and daughters to have an annual inspection of the cervix, and the importance of immediate eradication of any erosion or infection.

2. That the cervix of every pregnant woman should be examined by inspection and palpation. If erosion or infection be present she should be advised at that visit, of the importance of having the condition cleared up after delivery. This will eliminate a possible oversight on the part of the physician and impress the patient at a time when she gives consideration to her health.

3. The cervix should be protected against unnecessary laceration in labor by the elimination of pituitrin, thymophysin, so-called "pulling and bearing down" until the cervix is completely dilated.

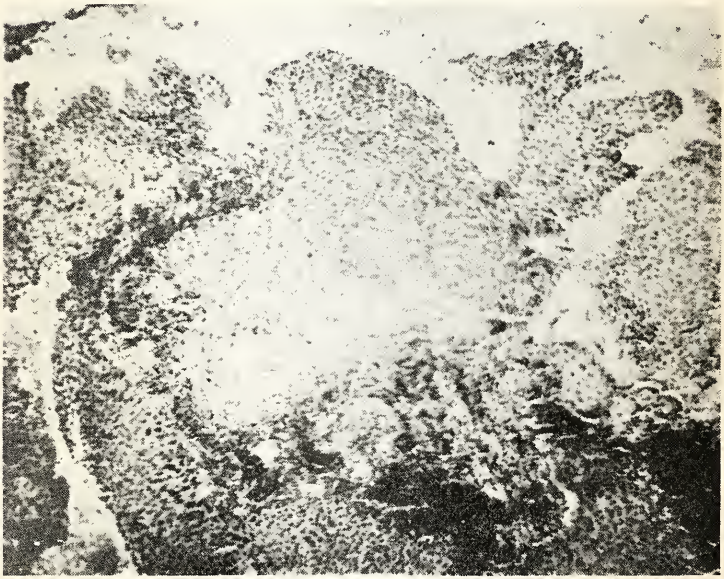
4. Gross lacerations of the cervix in hospital patients should be repaired under surgical precautions. It is a relatively simple matter to insert one, two or three chromic catgut sutures into a lacerated cervix after delivery of the placenta. Frequently the wound heals by first intention and may prevent a troublesome infection later.



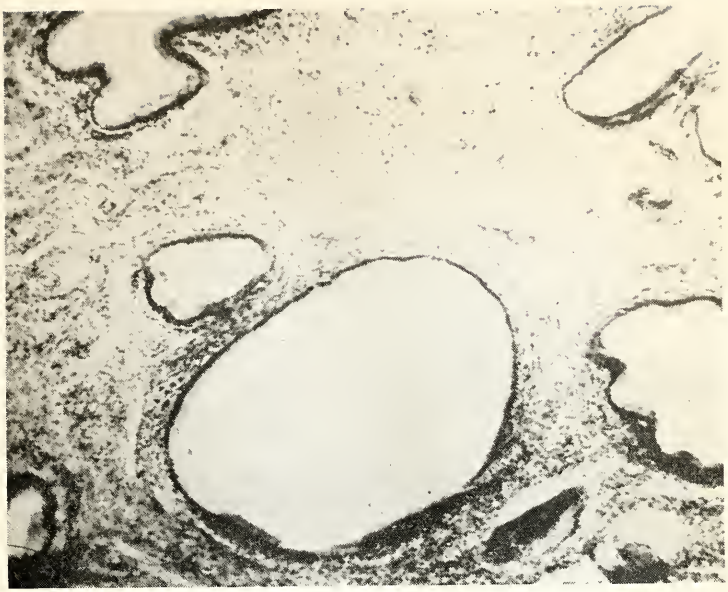
Case III. Fig. 1. Round cell infiltration beneath the squamous epithelium. The epithelium appears normal.

Case I. Fig. 1. Complete break in the squamous epithelium.

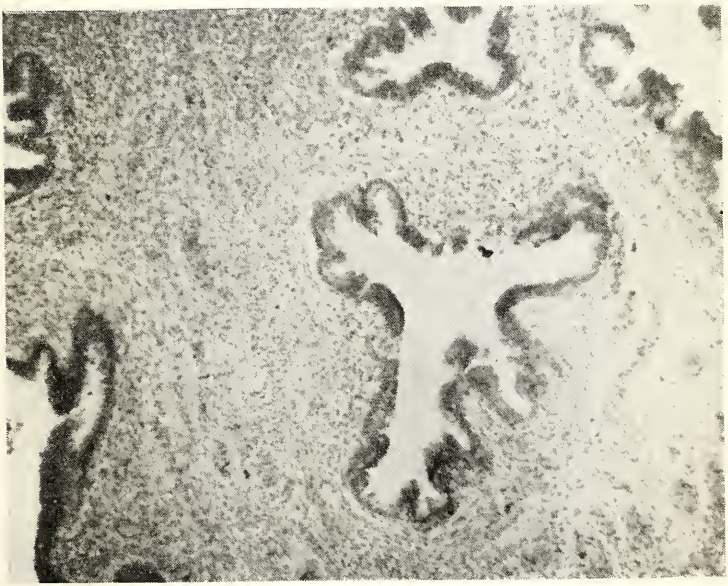
Case II. Fig. 1. Considerable thickening of the squamous epithelium.



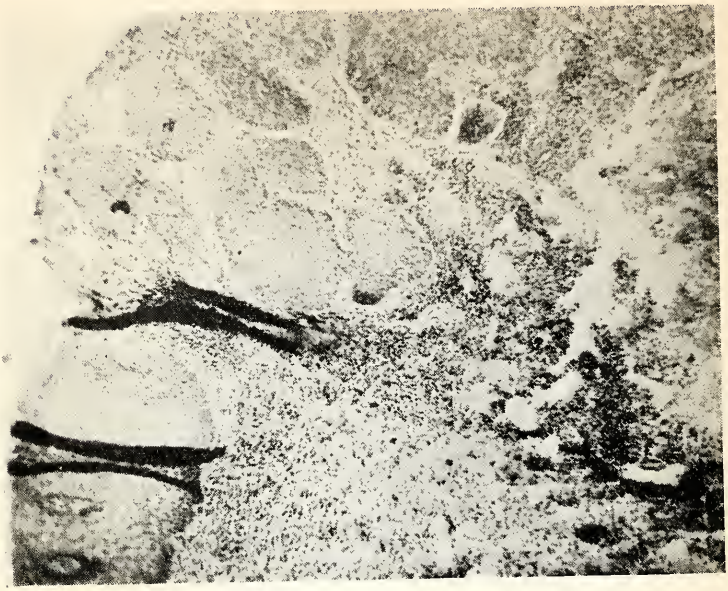
Case VII. Fig. 1. Carcinoma. The black areas in the photomicrograph represent areas of hemorrhage into a carcinoma.



Case IV. Fig. 2. Cystic degeneration

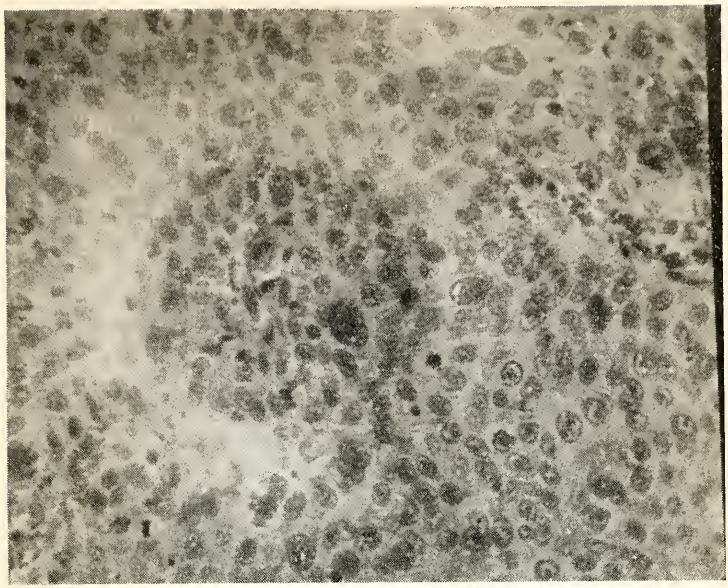


Case IV. Fig. 1. Glandular hyperplasia.

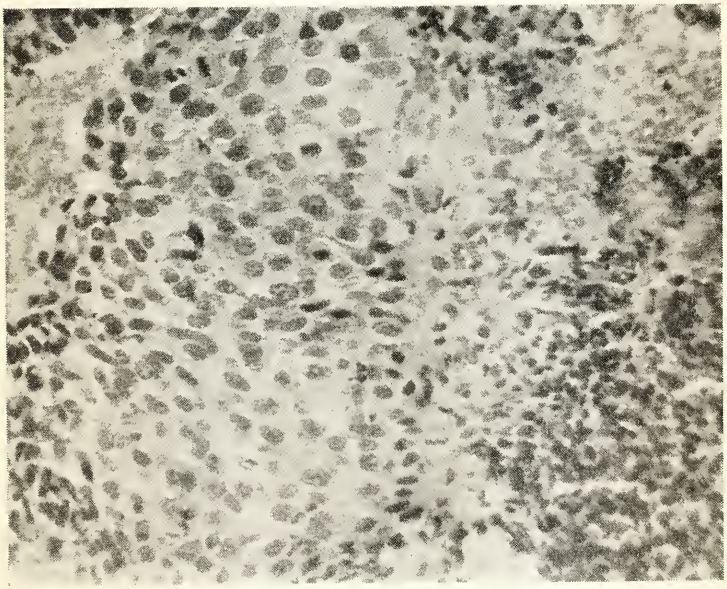


CASE VI. Fig. 1. A sudden change from apparently normal squamous epithelium to carcinoma. Schiller test negative on left, positive on right.

CASE V. Fig. 1. Complete break in squamous epithelium. Same case as above figures. Schiller test positive.



Case VII. Fig. 3. Carcinoma displaying anaplasia hyperchromatism, mitotic figures and hemorrhage into the tumor substance.



Case VII. Fig. 2. Carcinoma. A monaster and diaster are seen. The former is surrounded by a mass of red blood corpuscles.

5. The cervix of all patients should be examined by inspection six to eight weeks post-partum and selected cases should be repaired at that time. Any erosion or infection should be eradicated by appropriate measures.

6. No obstetric patient should be discharged by her physician whether he be general practitioner or obstetrician until the cervix is known to be healed.

7. An annual examination by inspection and palpation should be made in every woman who has borne a child, had a cervical injury or operation.

TO SUMMARIZE:

The cervix is an organ anatomically constructed to perform its particular function. It is constantly bathed in an infected medium. It is easily and frequently injured through sex trauma, douches, instrumentation, abortions and labor. This permits bacterial invasion which sets up a chronic irritation and inflammatory process which has but little tendency to self healing. Once bacterial invasion has occurred definite and radical steps are necessary to drive out the infection.

Erosion is the most common pathological condition in the cervix and is a constant forerunner of cancer (Bailey).

"The amount of laceration seems to bear no relation to the amount of erosion but the virulence of the underlying infection is the determining factor in the inflammatory process."

Ewing states that the evidence in the development of cancer of the cervix points to the origin in previously normal adult epithelial cells which pass through a series of changes induced by chronic irritation, the result of chronic infection.

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DISCUSSION

Dr. Sam M. Carrington, Oxford, N. C. Sixty per cent of all cancers occur in females. One-third of these occur in the uterus. Ninety per cent of the cancers occurring in the uterus originate in the cervix. Practically one hundred per cent of cervical cancers could have been prevented.

Floyd E. Keene in discussing the importance of repairs and cauterizations of the cervix in preventing cancer quoted the following:

"Pemberton reports 5,962 cases in whom the cervix had been repaired or cauterized, and only five subsequently developed carcinoma. Huggins reported 2,985 cases subjected to excision by the endothermic knife, and in none of these did carcinoma develop. In 300 consecutive cases of carcinoma of the cervix Farrar reports that 288 had had either full term or premature pregnancies, and in only nine had a cervical repair been done."

From 5% to 7% of the cancers of the cervix develop in cervices that have been left after a supra-vaginal hysterectomy. The occurrence is particularly high when the operation has been for a fibroid uterus. Arneson in reviewing Healey's cases at the Memorial Hospital in New York found that cancer occurred in the cervical stump after a sub-total hysterectomy in 2.6% of cases. Five year cures in cervical stump cases was only 14% as against 22.6% in all cervix cases.

As regards treatment Heyman gives the following data from European clinics: "In twenty clinics operation had been performed in 5,024 cases, and in seventeen clinics irradiation had been performed in 3,512 cases. The total salvage from operation was 18% and from irradiation 16.3%. The five year cures in the operable and border-line cases were 35.6% from operation and 34.9% from irradiation. There was a primary operative mortality of 17.2% and an irradiation mortality of two per cent."

Crossen quotes the following results of treatment with radium in various clinics:

Series	*No. of Cases*	*5 Yr. Cures*	*Percentage*
Regaud	317	107	33
Healey	1,574	352	22
Ward	343	85	24
Burman	349	70	20
Barnes Hospital	121	29	23

Dr. W. Lowndes Peple of Richmond treated 125 cases with 32% of five year arrests. There were three fatalities after the fifth year.

The greatest chance for reducing the mortality from cancer of the cervix lies in missionary work among ourselves and among the laity in the insistence that the lacerated, cystic, eroded cervices be repaired, cauterized, or amputated if necessary. The knowledge that 20-30% of all cancer of the cervices can be cured and that from 50-80% of early cancers in this location can be cured should also be spread.

ENDOCRINOLOGY IN RELATION TO GYNECOLOGY

By J. P. Pratt, Henry Ford Hospital, Detroit, Mich.

While gynecology, accepting its broadest definition, is a very old specialty, very little of importance concerning it was contributed before the last half of the past century. At this time the advent of anesthesia and antiseptic and aseptic surgery profoundly influenced the field of

gynecology so that for several decades operative procedures were dominant and a high state of perfection was attained. This prompted the characterization of gynecology at one time as a specialty sired by surgery and fostered by obstetrics. In recent years, however, the number of pseudo-family relations has perceptibly increased. Without enumerating all the relationships, special mention should be made of two other related and rapidly developing specialties—psychiatry and endocrinology. A few of the relations of endocrinology to gynecology will be discussed.

It would be presumptive to remind you, the citizens of this State, of the important role played by your former neighbors, Ephraim McDowell on the north and Marion Sims on the south. Their contributions to the development of operative gynecology are too well known to require further comment. You may justly look upon their achievements with pride.

Omission of further details concerning operative accomplishments in gynecology is not to minimize their well known importance, but to give an opportunity to emphasize some of the more recent problems related to gynecology.

While the normal activity of all the endocrine glands is essential for the normal function of the reproductive organs, the ovaries, pituitary and the thyroid seem the most important. The ovaries, however, being an integral part of the reproductive system have been the center of greatest interest. The idea that the ovary might be a gland of internal secretion had a rather insidious onset. For a long time the characteristic reactions of castrates had been discussed but no adequate explanation of cause and effect had been advanced. Furthermore, no satisfactory treatment of symptoms following castration had been found. With the success following thyroid therapy in thyroid deficiencies, considerable attention was attracted to the possibilities of glandular therapy. Attempts were made to substitute in castrates for the deficiency of the ovary as had been done in thyroid deficiency. Quite a variety of preparations of ovary were tried —fresh gland, dessicated gland and aqueous extracts. The results obtained were indifferent.

Curiosity as to the manner of the action of the ovaries was aroused sufficiently to suggest experiments of implantation of the ovary which were done by Knauer and Halban independently about 1900, who showed that an implanted ovary could entirely substitute for the apparent lack of internal secretion in castrates. This excluded the former theory that the ovaries acted upon the uterus by nervous reflexes. About the same time the excellent histological studies on ovaries of several mammals by Sobotta influenced Prenant to assume that the corpus luteum which looked so like a gland was probably the portion of the ovary which furnished the internal secretion. Likewise the eminent embryologist von Born was impressed with the possibilities of the corpus luteum and expressed himself to his class in so forceful a way that later two of his students, Fraenkel and Magnus, independently performed experiments which seemed to indicate that the

presence of the corpus luteum regulated the normal sexual cycle. The pronouncements of Prenant and Fraenkel influenced the trend of thought concerning the internal secretion of the ovary for many years. It was generally assumed that the continued presence of the corpus luteum was necessary to control nidation of the ovum and continue the sexual cycle.

The possibility of influencing disturbances of the function of the uterus by administration of some form of ovarian therapy received wide attention. A great variety of preparations of the ovary were employed for an equally varied group of gynecological symptoms. Many successes were reported in the correction of subjective symptoms while doubtful successes were reported for relief of objective symptoms. The preparations used were the fresh gland, pressed juices of the gland, aqueous extracts—not one of which had any potency. This wave of deluded enthusiasm continued until a new era was established when Iscovesco in a series of experiments begun in 1908 used lipoid extracts. His methods were used by other workers and were very greatly improved by Herrmann in 1915. In the light of our present knowledge, it is obvious that they were dealing with potent extracts although they were not able to obtain a concentration sufficient to produce striking results. Nevertheless, the work done at this time was fundamental and has considerably influenced the more conclusive work of recent years.

Sporadic interest in the Graafian follicle as an active agent of internal secretion began with Sonnenberg in 1907 who injected follicular fluid and looked for immediate results but his observation did not extend beyond thirty minutes from the time of injection and were, consequently, negative. In 1916 Frank obtained follicular fluid from the cow which he injected into the rabbit obtaining positive results. The outstanding event, however, in the study of the follicle was the work of Allen and Doisy in 1923 who discovered means of purifying the fluid so that it could be safely injected into human. They found that it would entirely substitute for the function of the ovary in castrated animals. Furthermore, they established a means of standardization of the potency of this fluid. This excellent work attracted general attention to the follicle and interest in the corpus luteum receded temporarily. At this time the potent fluid from the follicle was spoken of as follicular fluid, estrogenic substance, etc., but its chemical composition was not yet known. The limited amount of material was a handicap to chemical analysis. Fortunately, a substance manifesting the same reactions was discovered in the urine of pregnant women by Aschheim and Zondek therefore providing an abundant source of material. Many workers concerned themselves with determining the chemical nature of the follicular fluid. Success was first announced by Doisy who named it theelin and who obtained a pure crystalline substance. His findings were independently duplicated shortly after by Butenandt.

There is considerable confusion in reading the literature concerning the follicular hormone on account of terminology. It may be well therefore to enumerate the synonyms that have been applied: female sex hor-

mone, beta hormone, beta follicular hormone, ovarian follicular hormone, feminin, folliculin, menformon, oestrin, dioxyoestrin, ketohydroxyoestrin, thelykinin, oestrone, and 3-hydroxy-17-keto-1, 3, 5, oestratiene. In addition to these scientific terms for this potent hormone, there are even more confusing trade names. These products vary widely in their potency so comparison of their activity is possible only if the substance used is standardized according to the accepted methods. Fortunately, now an international unit has been established so that preparations from all countries can be standardized on the same basis. Closely associated with the study of theelin, another product was discovered, namely: theelol which is an alcohol derivative of theelin. This also has several different scientific names—trihydroxyoestrin, follicular hormone hydrate and 3, 16, 17-trihydroxy-1, 3, 5, oestratiene (estriol). The progestin from hog corpora lutea discovered by Corner and corporin of Hisaw have now been isolated in pure crystals. However, they are not yet available commercially. Synonyms for this substance are progestin, corporin, lutin and luteohormone.

It is now possible to enumerate quite an appreciable list of active principles for a choice for therapeutic applications in disturbances of an endocrine nature in the reproductive system. Thus there are the estrogenic principles, theelin, theelol and progestin from the ovaries; a somewhat similar principle—emmenin from the placenta; prolan (antuitrin-S, phyone and hebin) from the urine of pregnant women; the gonadotropic hormone and prolactin from the pituitary gland, and probably the most important of all, thyroid extract and thyroxine from the thyroid. From these a large number of commercial preparations are available which should always be interpreted in terms of the amount of active principle they contain.

Having in hand these therapeutic agents one should next inquire what are the gynecological conditions to which they may be applied. It would be most satisfactory if one could name a symptom and then apply a specific hormone. The problem is not so simple. There is no doubt that the best symptom indicator is aberration from the normal amount and rhythm of menstruation. The cause of this aberration, however, is not always clear and well defined. Probably the problem can be presented best by considering some of the disturbances of menstruation separately. It will be assumed, of course, that organic and systemic causes have first been excluded.

AMENORRHEA

Amenorrhea is not a clinical entity but it is a leading symptom of several gynecological conditions which are corrected when the amenorrhea is relieved. The amenorrheas of prepuberty, pregnancy, lactation and menopause are physiologic and require no further consideration here. Pathologic amenorrheas are either primary or secondary.

Primary amenorrhea applies to all patients who have never menstruated. The cause for failure to menstruate may lie at different levels. There may be anatomical defects of the uterus or vagina, organic or functional

changes in the ovaries, other glandular disturbance or even systemic disease. It is highly important to determine the level at which the cause is acting before undertaking any form of therapy. Thus, if there is a mechanical block of the uterus or vagina it would be useless to hope for menstruation to be established by any form of endocrine therapy. Furthermore, if there is a state of undernutrition many of the body functions might be disturbed and therapy directed toward any gland would be hopeless until the general condition would be corrected. A great deal can be accomplished in the relief of amenorrhea by raising the general level of lowered body functions.

Assuming that extrinsic factors have been excluded, attention may be directed to the ovary. Inference from experimental work in the laboratory would make it seem logical to expect success with substitution of ovarian products in cases of deficient ovarian function but until very recently there has been little encouragement from such a procedure. By the injection of an estrogenic substance—dihydroestrin—in large quantities followed by the use of small amounts of progestin, menstruation is reported to have been produced in women who had never menstruated previously. Kaufman ( ), Loeser ( ), Dodds ( ) and Clauberg ( ). These substances are not yet available for general use, therefore their clinical application cannot be evaluated properly at this time. A review of the attempts to relieve primary amenorrhea up to the present are, on the whole, disappointing.

Secondary amenorrhea includes those cases in which menstruation ceases or recurs only at long intervals. These are better understood than the primary amenorrheas and are more amenable to treatment. While it is not always possible to determine the cause, an attempt should be made to find whether there has been some change in the response of the uterus to normal stimuli or the function of the ovaries is deficient or whether there are some extrinsic factors having an unfavorable influence on the ovaries.

Attempts at substitution therapy have been somewhat more favorable in secondary than in primary amenorrhea but the results are not yet very satisfactory. In instances where the deficiency of ovarian function is slight, the administration of estrogenic substances seems more beneficial than in cases of great deficiency. Since there is no accurate measure of the amount of ovarian deficiency, considerable difficulty may be experienced in determining the extent of the deficiency. Even if the lack of ovarian function is calculated, there is no satisfactory criterion for determining the amount of hormone to be substituted. Many claim that the dosage can be estimated from the reaction of other animals and by such inference large doses are indicated. However, there is so much species variation that this method is by no means accurate. Enough apparently good results have been recorded to justify further attempts at substitution therapy for secondary amenorrheas.

Among the extrinsic therapeutic agents thyroid preparations offer the most hope for success. Satisfactory experience in the relief of secondary

amenorrhea by the administration of thyroid has frequently been recorded so that the causal relation in suitable cases can no longer be doubted.

Anterior lobe preparations from the pituitary have been shown experimentally to be potent factors in stimulating the ovaries. Although no pure hormone has been prepared from the anterior lobe the complex substances derived from this gland are sufficiently potent to justify their further study.

Disturbance of the function of the ovaries may be manifested by the opposite of amenorrhoea, namely, by too much or too prolonged bleeding associated with hyperplasia of the endometrium. This condition occurs occasionally near the onset of puberty, a little more frequently during the middle of the reproductive age and quite frequently near the menopause. While the findings in the ovaries observed during this abnormal bleeding are not constant there is usually an increase in the number of follicles at various stages of development and often lack of a normal corpus luteum. This association of increased bleeding and lack of corpus luteum formation led to the belief that the administration of some substance which would promote the development of the corpus luteum would tend to restore the balance and thereby correct the abnormal bleeding.

The fact that prolan obtained from the urine of pregnant women when injected into animals—mice, rats and rabbits—caused rapid luteinization of the follicles formed the basis for the assumption that a similar reaction would occur in women. Therefore combining the two observations that hyperplasia is usually associated with lack of luteinization and that prolan produces luteinization in animals it was logical to infer that the administration of prolan would relieve the bleeding from hyperplasia of the endometrium. The results have at least partly supported the assumption for there are numerous instances on record showing that the bleeding from hyperplasia has been corrected following the use of prolan. This form of therapy is particularly effective in cases of bleeding near the menopause but not very satisfactory in the cases near puberty.

The manner of action of prolan in women is quite interesting. While the theory of luteinization of the follicles seemed justified by the results obtained some interesting observations of your Chairman, Dr. E. C. Hamblen, show that corpora lutea are not formed in the ovaries following the injection of prolan. He has injected varying amounts of prolan at different intervals in the sexual cycle and at varying lengths of time before operation. The ovaries at the time of operation have rarely shown corpora lutea that could in any way be attributed to the effect of the prolan. At present, therefore, there is no entirely satisfactory explanation of the action of prolan in these cases.

For practical purposes in dealing with cases of bleeding with hyperplasia of the endometrium a curetment should be done to establish the diagnosis. This will exclude such other organic causes of bleeding as intrauterine polyp. The amount of prolan to be used is not yet definitely

established but usually one c.c. a day for five to ten days is sufficient. The time chosen for administration is preferably in the latter half of the intermenstrual period if the character of the bleeding permits this to be determined. Continuous administration of prolan is not necessary for a long period of time and should be avoided. No harmful effects of an overdose, however, has been reported. The first treatment will often be found effective for several months. As a rule subsequent treatments are not so effective as the first. Many cases have been held in check until the natural action of the menopause relieves permanently. The use of thyroid alone or with prolan often seems beneficial.

Other forms of treatment for hyperplasia of the endometrium which require an endocrinological interpretation are the removal of one or both ovaries or radiotherapy to diminish the function of the ovaries.

DISCUSSION AND SUMMARY

An attempt has been made to show that the development of operative procedures in gynecology has passed its zenith. The present trend in gynecology is to make use of the advances being made in endocrinology and psychiatry, as well as to continue the well established procedures. By the application of the knowledge obtained from endocrinology accurate diagnosis is often more possible and the indications for operation made clearer and in fact a certain number of operations are avoided.

Synonymous terms have been mentioned to help clarify the tools with which to work. The amount of hormone to be administered will depend upon the need of the individual case. Inference from animal reaction is unsafe, e.g., a rat tolerates one or two units of pitressin so that by comparison of weights the human dose would be 200 to 300 units. By experience it is found, however, that the human can tolerate only ten to twenty units. The limit of tolerance is quite well known for insulin and adrenalin. There seems to be considerably more latitude in the dose of the ovarian preparations and instances of overdose are doubtful. There seems to be a rather general impression that results will be obtained only when pure crystal preparations are available. Experience with other glands does not justify this assumption, for dessicated thyroid is one of the most widely used endocrine preparations. Pituitrin, insulin, and adrenalin used commercially are not pure crystal preparations. There is also the possibility that chemical purification may destroy the substance most useful to the body.

It is impossible in this brief discussion to cover the field of endocrinology related to gynecology so only a few of the more common conditions have been chosen. Because the problem is still open need not discourage one from continuing to try to apply to the patients some of the results of experimental work. Enough trials are now recorded to serve as a guide so that there should be little danger of an overdose. No serious results have yet been recorded from an overdose of estrogenic substances

or prolan, although the question of acquiring an immunity to them has been raised.

Better therapeutic results must depend first of all on better diagnosis. Every practitioner can and ought to contribute to the problem of the practical application of hormone therapy.

DISCUSSION

Dr. Bayard Carter, Durham, N. C. Mr. Chairman: You are to be congratulated upon your choice of your guest speaker. It is a privilege for this section to hear Dr. Pratt speak in a field to which he has contributed so much. May I remind the section that Dr. Pratt has demonstrated the presence of theelin not only in the graffian follicle of humans but also in the corpus luteum. He has also demonstrated the presence of progestin in the human and has done pioneer work in the study of ovulation in the human.

As a clinician he has faced the same problems which all of us face in attempting to treat the various so-called endocrinal disturbances. The problems raised in his presentation today might profitably be discussed by us for hours.

Any attempt on my part to add to his discussion of the historical survey of the advances in endocrinology would be superfluous. It is of great importance for us to recall this work and to review it regularly unless we forget the basis for it and draw erroneous conclusions for our own attempts at therapy.

It is singularly fitting that he has stressed the importance of a consideration of the patient as a subject for clinical, endocrinal and psychiatric study. Most of us are poor psychiatrists and most of us consider ourselves too busy to add to our knowledge of the psycho-biologic features of the patients in our case studies. That the relation between the endocrinal studies and the psychiatric studies needs more emphasis than most of us care to give to it.

The necessity for a careful study of thyroid function is presented and should not be neglected. The results from thyroid therapy in certain of our gynecologic problems have been most gratifying, and in view of the great advances made in the study of the internal secretions of the ovary, corpus luteum, pituitary, and placenta, it is not irrational to suppose that we may in the use of these internal secretions arrive at a more definite specificity of action.

I am glad that Dr. Pratt stressed the confusion which has arisen from the use of so many different names for the follicular hormone. Such terms as theelin, ovarian follicular hormone, estrogenic substance, beta hormone, folliculin, oestrin, feminin—to mention but a few—and also the numerous preparations marketed under different trade names—may cause us to wander in our therapy and in our expectations for that therapy. He has also pointed out that the need for standardization of these products has

been met and that the persons who are using the reliable preparations have a duty in assuring themselves of the standardization of the preparations employed.

In closing my part of the discussion may I also emphasize that the advances in endocrinology have done much to improve our clinical approach and our clinical diagnosis. Certainly, as we apply the generally established principles we find our therapy much more rational and our expectations of results from that therapy much more sane and rational. We have also seen a marked decline in radical surgical procedures upon female patients. One word in regard to operative procedures: I cannot stress too strongly the necessity for accurate diagnosis prior to any form of treatment with these hormonal preparations. The diagnostic curettage with careful microscopic examination of the tissue obtained by an experienced worker will continue to stand as the operative procedure of choice. At the time when the so-called menopausal bleeding changes are noted I would stress the necessity for accurate diagnosis prior to any attempted therapy by endocrinal preparations.

This is our opportunity to acquire information. Might I thank Dr. Pratt for this presentation and ask that in his closing remarks he give to us his management of the more distinctive types of bleeding occurring near the menopause.

THE PARADOXES OF ECLAMPSIA

By Robert A. Ross, M.D., F.A.C.S., Durham, N. C.

Department of Obstetrics and Gynecology, Duke University School of Medicine.

So long as we use the term "toxemia of pregnancy" and fail to isolate a toxin, anyone and everyone can advance any idea as to the causation of eclampsia. One can rest assured that any statement will be subjected to close tests and scrutiny and challenged at every turn. If we read the books of Burns and Blundell, published in 1813 and 1834, we find a fairly accurate description of eclamptic convulsions and the statement that perhaps this is a train of symptoms rather than a disease entity. We also find a description of the changes in the nervous system. When we study such statements we see how little has been added; yet many different ideas and theories have been advanced and the subject has occupied the minds of obstetricians and associated workers. Every man who has seen eclampsia has some idea as to its causation. It is unnecessary to do more than recall some of these and reveal the paradoxes.

Since Lever's article in 1843 eclampsia has been associated, in the minds of some, with uremia, but abundant proof has disproven this.

Soon after the development of bacteriology we find Delore and Rodet, 1884, suggesting bacterial invasion as the cause. Many conflicting reports have been published. Lately, the work of Stroganoff, 1923, and Talbot and

LaVake, and Mellenby-Johnston, and others show that these women are susceptible to infection and harbor infection; but the positive statements end here.

In 1887 Bouchard advanced anti-intoxication as a cause. Here again no one was able to isolate a toxin.

When Schmorl, in 1893, published his pathological findings in eclampsia and described the liver lesions and confirmed the earlier works of Jurgen, Klebs and Pilliet, a great many investigators approached the subject as a biological reaction and we find some of the ablest men investigating agglutinins and hemolysins and anaphylactic reactions, all of which were inadequate.

Ehrlich's side-chain theory caused Veit, in 1902, to put forth the "deportation" of fetal elements into the maternal blood-stream. This work was provocative of much good investigation.

That the fetus itself was causative must have occurred and does occur to all. In 1899 Fehling put in writing the theory of intoxication by the products of fetal metabolism.

The placenta has been indicted and we find Leipmann and others dwelling at length upon the endotoxins. Young, chiefly, emphasized the autolytic products. Recently Bartholamew and others have again directed attention to this idea. Bland and Montgomery have more properly shown that the infarcts are secondary.

Various alterations in maternal metabolism have been brought forward. Spielberg, in 1870, was among the first. The trouble here is we don't realize just how much of this change is compensatory. Every constituent of the blood has been analyzed and various individual salts, base and amino acid, have been traced. Stander has probably produced the most comprehensive monograph on this subject, though there are many others. He was especially interested in the amino acids. We have had a chance to check the work of Perlzweig and Payne who studied the total bases of the blood, with nothing conclusive nor indicative.

Naturally, the endocrines have been suspected. Lange, Nicholson and Ward thought of the thyroid. Vassale and Seitz investigated the thyroid. Hofbauer thinks the hypophysis and adrenals are at fault, and lately Anselmino and Hoffman have re-emphasized and elaborated on this idea; but here we run into anti-hormones and the picture becomes complicated. Mammary toxins have also played a part in the opinion of Sellheim, 1910; Healy and Kastle.

During the war dietary alterations were studied at great length. They, however, have spoken chiefly of the food elements and minerals.

Zangmeister revived the old Traube-Rosenstein theory, that of edema of the brain and other physico-chemical changes. At present, we find Fay and Arnold holding that this is entirely causative, but most investigators think that this explains the convulsions only.

Whatever the cause, Williams laid down eight conditions that should be met: 1. Cause of liver changes. 2. Increased incidence in primipara, multiple pregnancy, and hydramnios. 3. Geographic distribution (and Harrer would add seasonal). 4. Increase as pregnancy approaches term. 5. Edema as a favorable sign. 6. Low incidence of recurrence of eclampsia and serious complications of nephritis with subsequent pregnancies. 7. Improvement following fetal death. 8. Milk diet is as efficacious as low protein salt poor diet.

For the past few years we have been struck by the type of patient who has been admitted in convulsions. To put it poorly they appear in a very poor state of nutrition. Instead of the plethoric, full, fat individual we more often find a pale person who is anemic. The hair and nails are apt to be brittle. On checking the localities from which they are referred and on reviewing the state morbidity and mortality statistics, we observe that in the same areas in which eclampsia occurs most often we are apt to find a larger percentage of pellagra and similar diseases. With this fact in mind, and with some experience in treating the early toxemias and polyneuritis, we have tried to analyze our records.

Strauss, McDonald and Castle have shown that dietary deficiencies can account for both hypochromic and macrocytic anemias of pregnancy, and submit facts which they think favor the view that polyneuritis of pregnancy is a deficiency disease and may be satisfactorily treated as such. Beckwith and Lufkin reviewed the literature and collected fifty-two true cases. In practically every instance the neuritis was preceded by pernicious vomiting. They point out the similarity in the clinical and pathological nerve changes in pregnancy and in the changes resulting from beri-beri and pellagra. Plass and Mengert have added other cases and carry the reasoning in the same direction, and point to the hope that a more helpful therapy is at hand. Wilson and Garvey, Hoffman and McGoogan, among others, have also written on this subject.

In the past five years we have seen three known cases of polyneuritis of pregnancy. One terminated fatally the day after admission to the hospital undelivered at four and one-half months. Another recovered the use of her lower extremities one year after therapeutic abortion. The third was four months convalescing after spontaneous abortion at four months. In all three, pernicious vomiting was present. The admission diagnosis of the fatal case was acute yellow atrophy of the liver.

We have seen two spurious cases in an experience similar to Plass and the German writers, in which the nerve symptoms were probably due to a drug used as an abortifacient. Both recovered.

We think vitamin B should be used as a prophylactic in pernicious vomiting as suggested by Strauss and McDonald.

We know how prone these patients are to infection and read with interest the conclusions of D. T. and Susan G. Smith who point out the relation of vitamin deficiency to focal infection. The most important of

these is vitamin A, which is referred to as the anti-infection vitamin of Mellenby. C and G are next in importance and B and D are less important. There is no proof that E has any relation to infection. Infection is often the first symptom of vitamin deficiency and a higher level of intake is necessary to prevent infection than to promote growth. Pure vitamin deficiencies are rare in this country, yet partial multiple, chronic deficiencies are probably quite common and may manifest themselves as recurring focal infections. Ruffin and Smith, in treating pellagra with certain liver preparations at Duke Hospital, and in reviewing the foods consumed by the patients prior to their development of pellagra, were impressed with the similarity between their diets and the diet which Goldberger and Wheeler used in producing pellagra in convicts in Mississippi. An estimate showed this to be a 2,900 calorie diet consisting of fat meat, field peas, rice, hominy, grits, cane syrup, brown gravy, and lard and corn meal, which shows a diet deficient in vitamin G (B_2), also A, C and D, and in iron, calcium, phosphorus and complete proteins.

The last report of the Bureau of Vital Statistics in the State showed 74,743 births and 33,069 deaths. Of these deaths, 640 were due to diseases of pregnancy, childbirth and the puerperal state. There were 236 deaths due to toxemias of pregnancy and 76 from postpartum hemorrhage, a certain percentage of which would have a toxemic background. During the same year there were 696 deaths from pellagra, of which 470 were female and 275 were in the child-bearing age. We wrote to our confrères in five widely divergent localities within the State and found that there were 44 toxemic deaths. These counties had a total of 77 deaths from pellagra, 35 of which were in women in the child-bearing age. This seems significant at first glance, but probably means simply that both these diseases are evident throughout the State and simply parallel each other. In our county there were:

Total births	1748
Maternal deaths	10
Deaths from toxemia	5
Total deaths, county	773
Maternal deaths	1.3 per cent of total
Maternal mortality	0.55 per cent

We have investigated our hospital records (Watts, Salvation Army and Duke) for the past four years and in this find that during the past four years 160 females have been treated for pellagra. Only seven of them were pregnant and one of the seven had symptoms of late toxemia. One patient had sprue. We are at present studying the fertility of individuals with pellagra. During the same period of time there were 2,120 patients delivered in these hospitals and 174 patients with late toxemia of pregnancy. Our mortality rate for this complication is about 13 per cent.

We have analyzed in some detail the progress of patients who have been delivered at the maternity home. These patients came from the rural districts and, as a rule, arrived at the hospital in a very poor state of

nutrition due to the worry of being pregnant, poor home conditions sometimes, not eating in the hope of not gaining weight, and not having received medical attention. The home was operating on a very small budget and had difficulty in supplying the actual food and accessory factors that could improve and overcome this condition. We have checked over the diet and have reviewed the histories. We submit a summary of 100 cases lifted from the files. An analysis of these records showed an astounding incidence of toxemia. Seventeen cases developed symptoms and signs of toxemia characterized by headache, epigastric pain, edema, scotomata, or general malaise associated with a rise in diastolic blood pressure above 90 mm. Hg., a rise in systolic pressure above 140 mm. Hg. or albuminuria. Of these eight cases showed moderate to marked pitting edema, elevation of blood pressure and albuminuria and fall definitely into a pre-eclamptic group. Three cases were eclamptic, two having severe generalized convulsions before delivery, and one developing convulsive spasms 24 hours following delivery.

Since many of the cases (average age 19.5 years) had been under observation for three to fourth months and since fourteen of the seventeen cases of toxemia developed or showed progression of symptoms during their stay at the hospital an opportunity was offered to study the environment conducive or contributing to this disorder.

A study of red blood cells and haemoglobin in 23 cases observed over periods up to twelve weeks including 161 determinations of red blood cells showed moderate to severe secondary (microcytic) anemia in 21 cases. The initial determinations of red blood cells in these 21 cases showed a variation in red blood cells from 2,090,000 to 3,970,000 with an average of 3,400,000. Since there had been no history of blood loss, and since the diet in all cases had been questionably to definitely deficient in iron containing foods, the anemias were thought to be dietary. This supposition was further strengthened since there was marked increase in red blood cells in fourteen cases when iron ammonium citrate or Blaud's pills were given as supplements to the routine diet.

UNEXPECTED MATERNAL DEATHS IN OBSTETRICS

By Oren Moore, M.D., Charlotte, N. C.

When the Chairman assigned this title to me, I felt that the incident of occurrence was so limited that, in all probability, little of interest to this Section could be developed, but I also remembered that someone has said, in epigrammatic fashion, that "Nowhere in medicine can a scene of happy anticipation change to one of bleakest tragedy with such startling rapidity as in obstetrics," and indeed every obstetrician has had grim evidence to bear witness to the truth of this statement.

When I began to search for material for the development of this theme, I discovered that the causes of unexpected maternal death were not restricted to these relatively few and rare cases of embolus and hemor-

rhage that we are prone to believe are the causative factors in these tragedies, but that a fairly wide variety of other etiological causes play a not insignificant part. In the several reports on maternal mortality through which I scanned, unexpected maternal deaths accounted for only about one to two per cent of the total, and probably the overwhelming majority of this two per cent is not only unpredictable but unpreventable. But even this statement is debatable for, after all, when we analyze the causes, as we shall presently do, a very appreciable per cent will be found directly due to either inadequate prenatal care, or to unskilled obstetricial attention, and in so far as these two agencies can prevent untoward happenings, just so far will they reduce the incidence of unexpected maternal mortality.

First, I shall classify these deaths as "Sudden Deaths," and under that head comes

Embolus	
Uterine Hemorrhage	Post Partum Placenta Previa Premature separation of Placenta
Shock	Obstetrical After obstetrical operations
Convulsions of toxic origin	
Acute cardiac failure	
Cerebral Hemorrhage	
Anesthetic	
Uterine Rupture	
Ectopic Rupture	

In discussion of this group, *Embolus,* which plays a large part in causing sudden death, is, in most instances, unpreventable, and yet it is reasonable to assume that, with a minimum of trauma in delivery, such occurrences are less likely to develop.

Uterine Hemorrhage produces less and less fatalities when the attendant has a thorough knowledge of his patient before, when he has adequate equipment for delivery, operation, and transfusion, and when he possesses knowledge and skill enough to apply such equipment.

Toxic Convulsions. Possibly death from this cause always occurs as the result of cardiac failure or cerebral hemorrhage, and therefore should be grouped under one of those two heads, but since proper prenatal observation allows us to lessen the incidence of toxemia, and to recognize its early approach, it seems wise to discuss sudden deaths which result therefrom as being in the larger sense "preventable deaths," and that the next group,—

Acute Cardiac Failure, be classified on its own merits. Here, again, close antenatal observation permits us to suspect cardiac insufficiency and cardiac disease in most of the cases which may later become acute cardiac failures and, with the coöperation of internists and general medical men, we should be able to appreciably lower this item as the cause of unexpected deaths.

The same is true of the next member of the group, *Cerebral Hemorrhage,* for rarely indeed does cerebral hemorrhage occur without preceding hypertension, uremia, or other evidence of vascular disease, and again the coöperation of medical man and obstetrician should serve to effect decided prevention of fatal termination.

Anesthetic Deaths. It has long been traditional that chloroform is a safe anesthetic during labor, and that it fulfills most of the requirements of that period, but examination into the facts of this tradition leads one to the conclusion that such is not the case. Witness the occasional death due to improper administration, and witness again the known destructive effect on liver cells of this agent, which is especially true when toxemia is already present. Other anesthetic agencies have their definite limitation in the matter of safety, and while it is obviously not only the duty, but the high privilege, of the attendant to take away the agony of the woman in labor, it is a far more important duty to return to life's activities a living and well mother, and in consequence, not only should the selection of anesthetic be a major item, but also the selection of the anesthetist. It is wise, at this point, to remark that the overwhelming majority of anesthetics and pain-controlling procedures, as well as the unusual and so-called "short cut" methods of delivery, have all been devised by experts for the use of experts, and before any one of them is employed, a degree of skill should be attained which precludes unhappy sequelle.

Uterine Rupture. In the statistical study, as presented by reports from various organizations, State Boards of Health, etc., it is difficult to determine whether uterine rupture with sudden death was spontaneous or directly due to faulty obstetrical procedure, such as early administration of Pituitrin, abnormal position, neglected labors, or operative interferences,—and of course the history of previous hysterotomy. In consequence, one is unable to say to what degree Uterine Rupture can be prevented, but it is reasonable to assume that spontaneous rupture, being one of the rare obstetrical complications (and when it does occur, being amendable in a certain percent to skilled and prompt surgery), deaths so listed in these reports must inevitably be found due to inadequate attention.

Ectopic Rupture. Here again, but with not much emphasis, it may be stated that careful supervision and examination of the parturient woman will frequently lead to diagnosis and operation early enough to prevent rupture, and even after its occurrence, adequate surgical attention may serve to prevent fatal termination.

Now the second group of cases which account for unexpected deaths may be classified as "Delayed Deaths," and here we find

Toxemia with acute Yellow Atrophy
Uremia, and
Pulmonary Oedema

leading the field. Within certain bounds these factors become less dangerous if adequate prenatal care has been exhibited.

Infections: Infections, such as septic phlebitis and following abortions, are next in order of occurrence, and here adequate attention again serves to lower the mortality rate.

Last in this group is puerperal diseases of the breasts and, as will be readily suspected, these conditions are so very rare as to present no real problem in this discussion.

When we come to the summation, one is forced to the conclusion that the "irreducible minimum" of 1 to 2 to 3 deaths per thousand (according to whose statistics are being quoted) is not in any sense a fixed and predetermined rate. Certainly this statement is true if anything like ideal conditions can be achieved. By "ideal" we mean that when sufficient general knowledge is disseminated among the laity, so that early selection of an attendant is made, and when general and fundamental knowledge of prenatal care and of obstetrical procedure is achieved by phyiscians, when adequate equipment and nursing is available, when close coöperation among all branches of the profession that may be involved in the care of a gravid woman is established, and when a splendid feeling of responsibility is engendered in the minds of all the human agencies employed, then indeed an "ideal" has been attained and the unexpected maternal death rate actually reaches the "irreducible minimum," which we may discover to be a far smaller figure than any before conceived.

THE CAUSE AND PREVENTION OF PUERPERAL AND POST-ABORTAL INFECTIONS

By Thomas Leslie Lee, M.D., F.A.C.S., Kinston, N. C.

It is quite needless for me to stress the importance of this subject. The problem of the prevention of puerperal and post-abortal sepsis is of interest not only to the medical profession, but to the public at large. Much has been written in the lay press in recent years concerning the high maternal mortality rate in our country. Some of these accusations are true, most of them are false and due to misunderstandings and misinterpretation of statistics by lay writers wholly incapable of deducing the facts from the material at hand. It is essential that we as physicians maintain and, perhaps, restore the confidence which the community places in the medical profession. To do this we must be ever alert, check up on ourselves at intervals and if necessary clean our own houses.

The prevention of puerperal infection begins early in the prenatal period. Each and every pregnant woman should have a thorough examination, including blood examinations. Any abnormality found should be at once corrected. She should be instructed as to her diet, elimination, douches, intercourse, and the untoward symptoms during the prenatal period. Every woman has the right to expect adequate prenatal care and every physician obligates himself to give it when his services are engaged. The large class of cases delivered by midwives must be watched over by the public health department, since they are in direct contact with the midwives.

Senmelweis in 1847 discovered and preached that puerperal infection was a contact infection. Holmes in 1842 propounded the same theory, but dropped the subject due to opposition. With the advent of the germ theory of Pasteur and Koch and the introduction of antisepsis by Lister, the work of Senmelweis was indicated. Thus it remained for Pasteur, Koch, Lister and all physicians since them to prove what Senmelweis postulated. Namely, that puerperal infection was in the main carried from patient to patient by the hands and instruments of those attending obstetrical cases. Today, as in yesterday and yesteryear, puerperal sepsis, toxemia and hemorrhage are the three most important causes of our high maternal mortality; and yet these three entities are truly in the main preventable diseases. If the truth were known, many of the deaths attributed to hemorrhage and toxemia are in reality due to infection.

It has been definitely shown that the vagina of the pregnant woman during the prenatal period harbors definitely pathogenic organisms. The organisms most usually found are non-hemolytic aerobic streptococci, anaerobic streptococci, staphlococci and B coli. The hemolytic streptococci is not frequently found in the vagina under normal conditions. Its presence is estimated at from 1-3%. Thus it is seen that perfectly healthy women harbor organisms of a varying degree of virulence in the vagina. But the vast majority do not become infected, from which must conclude either that these organisms, even the hemolytic streptococcus, are non-pathogenic or that the host is immunized against them. The possibility of the patient being immune to organisms present in her vagina, and the presumption that these are of the same type as those of her environment may account for the fact that the dirtiest patient may be confined in her home amid the dirtiest surroundings with the entire absence of aseptic precautions, and have a perfectly normal puerperium with never a degree of temperature. But there is the possibility that these same organisms are potentially virulent, and that given suitable conditions such as bruised, lacerated and devitalized tissue they may cause infection.

Puerperal infection from the standpoint of source of infection may be divided into two classes. 1. The endogenous or autogenous, that is, those infections derived from the organisms already present in the generative tract at the time of labor. 2. The exogenous or those infections induced from without.

ENDOGENOUS INFECTIONS

The vagina during pregnancy and labor contains organisms. Fortunately most of these are non-pathogenic. These organisms ascend the cervix and into the uterine cavity, by the third day of the puerperium and the uterine cavity does not become sterile again until the 12th to 14th day. The prevention of this type of infection then, must be approached in two ways. 1. Eliminate the organisms from the vagina before and during labor. 2. Control certain factors which may favor these organisms acquiring virulent properties. As to the first precious little need be said. Vaginal anti-

septics are used but their proven value is limited. It is practically impossible to sterilize the vagina either during pregnancy or labor. Watson has shown that the three prime factors favoring endogenous infection are "prolonged labor, extensive laceration and excessive hemorrhage." To this I would add the anemias of pregnancy and the grossly infected cervix.

Prolonged labor is probably the most frequent cause of endogenous infection. Those patients in labor for unusual lengths of time have their strength sapped from them and there is an upset of all metabolic processes. Due to their diminished vitality from the prolonged ordeal their resistance is lowered. The pregnant and puerperal woman seems to be naturally more susceptible to organismal infection than the non-pregnant. Her resistance to infection once established appears to be diminished. Obstetrical operations done by competent and skillful operators for definite obstetrical indications do not add to the maternal or foetal morbidity or mortality. When indications for an obstetrical procedure arise, the sooner it is done the better, provided the foregoing conditions can be met.

Extensive laceration and excessive hemorrhage need little explanation as to their part in the cause of endogenous infections. They are usually accompanied by prolonged labor, but not in every instance. With extensive lacerations and large areas of traumatized tissue it is readily seen that organisms may gain direct entrances into the blood stream. Excessive hemorrhage and the anemias of pregnancy leave their host with lowered resistance and vitality. The opsonic powers of the hematic system are lowered, thus leaving the host a prey not only for infection but other diseases prone to develop in the puerperal woman.

I am convinced that a goodly number of the cases of endogenous puerperal fever have their origin in the chronically infected cervix. By the chronic infected cervix is meant that large class of cases seen early in the prenatal period with hypertrophied, cystic, lacerated and eroded cervices. Organisms both virulent and non-virulent are present in untold numbers. If seen early during the prenatal period these infected areas are easily cleared up with the nasal tip cautery. I do not hesitate to cauterize lightly the pregnant cervix up to the third month. I have done this on numerous occasions and never have I seen any untoward effects.

EXOGENOUS INFECTIONS

Those infections of exogenous origin account for the greater number of puerperal infections. These infections may be called contact infections in that they are usually carried to the patient by some intermediate host, either the doctor, nurse, midwife or visitor. Many of these infections are due to carelessness and many more to ignorance. Certain factors must be considered in the etiology of exogenous infections, namely: 1. Surgical asepsis. 2. Those lowering the patient's resistance to infection. 3. Those increasing exposure to infection. 4. Those due to ignorance and carelessness.

Surgical Asepsis: Are we carrying into obstetrical practice those principles of aseptic technique in which we have been so thoroughly trained in surgery? Who would dare invade the peritoneal cavity without thorough preparation of the skin of the abdomen, without meticulous care in preparation of the hands of the operator and without wearing sterile gown, rubber gloves and masks? How many obstetrical cases are conducted under such as the above conditions? Outside of institutions I would say not 10%. True it is impossible in every instance in every home to carry out such an elaborate technique. However, the principles of asepsis can be maintained. The bed, the patient and the attendant can be made socially clean, if not surgically clean. Clean linens can be had in the majority of homes. The attendant with little effort can either shave or apply some antiseptic solution to the vulva. He can surely scrub his hands with soap and water and cleanse his nails. He can easily carry some antiseptic solution and rubber gloves for use in making examinations and during delivery. He can surely boil instruments before they are used. If conditions are not ideal, vaginal examinations should be reduced to a minimum. If even these principles of asepsis were carried out in every obstetrical case, there would be a reduction in the number of such cases.

Factors lowering the patient's resistance include excessive blood loss at delivery, anemias of pregnancy, dietary deficiency and toxemias. The first two of these were discussed under endogenous infections. I would add here that every physician attending obstetrical cases should carry sterile gauze packing. If there is excessive bleeding, uterine and viginal tamponades are at times life saving measures, at the same time preventing many cases of sepsis. There is no use for tamponades after the patient is exsanguinated. Use it at the first indication of excessive bleeding.

In England much attention has been paid to diet during the prenatal period in an effort to prevent the development of puerperal infections. There is some evidence that vitamine A does play some role in increasing the resistance during the prenatal period. Nourishing diets, rich in vitamines and calcium should be insisted upon.

The toxic patient is prone to develop infections because of her lowered resistance and upset metabolism on her part and the uncontrollable desire to deliver the patient on the part of the attendant. Unless conditions are ideal there is but one treatment of toxemias and that is conservative. Accouchment force and operative obstetrics should not be attempted on this type of patient in the home. In this day of good roads and a hospital in every county there is little excuse for those procedures being done at home. Many cases of sepsis will be prevented if the above advice is followed.

Factors increasing exposure to infection include respiratory diseases, vaginal manipulations, wounds produced by Caeserian section, lacerations, episiotomy, induction labor, etc.

It has been definitely proven that infection may be carried to the puerperal woman by the droplet route, that is, from the respiratory tract

of attendants or visitors. I can illustrate this no better way than by a quotation by Watson from a paper of Smith in The Journal American Medical Association. Quote "A physician attended three patients in their own homes, situated three miles apart. Streptococcic septicemia developed in all three and all of them died. In regard to this instance, Smith writes:—Serological examination showed that all strains obtained from the uteri and blood of the three patients were identical with that obtained from the doctor's throat. Not only so, but during her brief illness at home Mrs. J. S. was attended by her sister, Mrs. G. and this woman developed a severe tonsillitis on the day following the removal of Mrs. J. S. The tonsillitis was followed by an acute otitis, and from the pus a hemolytic streptococcus serologically identical with the other strains was also cultured." I am sure this leaves no doubt as to the part played by carriers in the production of puerperal infection.

Vaginal manipulation should need no comment. More infection arises from this one cause than any other. This class of infection is directly due to the attendant. Physicians and midwives are alike responsible. Rectal examinations should be preformed on all cases when conditions for vaginal examination are not ideal, that is, when the principles of asepsis cannot be carried out. With little practice any physician can learn as much from rectal palpation as from vaginal manipulation. During vaginal manipulation not only are foreign organisms introduced into the vagina and cervix, but at times there is an almost irresistable temptation to stretch the cervix, thus producing innumerable tears in the mucus membrane of the cervix and affording organisms a direct entrance to the blood stream.

In this day of "Furore operatives" in obstetrics wounds play a large part in the production of puerperal sepsis. With routine induction of labor, routine episiotomy, routine forceps, Caeserian section with questionable indication, gross mismanagement of the third stage, there is no doubt that our puerperal mortality and morbidity are high. Nothing in obstetrics should be routine, but each procedure performed for definite indications which experience has taught gives the best results. No one practitioner or obstetrician can formulate indications from his own small series of cases. The statistics of several men or several groups of men must be studied. If we are to reduce mortality from sepsis we must reduce the amount of needless operative obstetrics.

Ignorance and carelessness are responsible for a goodly number of both puerperal and post-abortal infections. These factors apply to the patient as well as the attendant. Ignorance of asepsis and of the fundamental principles of good obstetrics on the part of the physician are inexcusable. Ignorance along with carelessness is damnable and in some instances nothing short of murder. More time should be allotted obstetrics in the curriculum of our medical schools. In the average school surgery occupies twice as much time as obstetrics yet, not ten per cent of the students will ever perform a surgical operation, while at least seventy-five per cent will attend obstetrics cases.

The public must also be educated. This must be accomplished by the physician in practice in conjunction with public health and lay agencies. Midwives must be educated and instructed. This instruction should consist of the principles of asepsis and antisepsis, to recognize gross abnormality and to keep their hands away from the vagina of the patient.

POST-ABORTAL INFECTIONS

The prevention of post-abortal infections must be considered under two heads. 1. Induced abortions. 2. Proper treatment of abortions. Of all abortions at least fifty per cent are induced, either self-induced or at the hands of someone else. They are in many instances produced by those untrained and unprincipled. This number is mounting rapidly. I hesitate to discuss this problem as I have no solution to offer. The present-day woman has learned that if she tries hard enough she can either induce the abortion herself or have it induced. Her friends are only too glad to advise her what to take and where to go. If the present-day attitude toward child bearing does not change, then some form of birth control is inevitable and the legal and moral aspect of induced abortion must change.

The treatmet of infected abortion is well established. Statistics from large clinics embracing large series of cases definitely prove that the conservative treatment has the lowest mortality. There are a few chinics and a few good men who still advocate emptying the uterus in the face of definite symptoms of infection. By conservative treatment is meant that no operative treatment is indicated as long as there is temperature. Supportive treatment is carried out in this stage consisting of ice bags, transfusions of whole blood, non-specific foreign protein and other measures for combating the infection and increasing resistance. Under no condition should curretage be attempted as long as the patient has temperature. Nature lays down a protective wall of leucocytes in the uterus, when infection is present, if this wall is broken through or removed with the curette, then direct extension of the infection into the blood stream is eminent. If portions of the placenta are seen bulging from the cervix they are to be removed with the utmost gentleness and the uterine cavity not invaded.

SUMMARY

To summarize briefly the prevention of puerperal and post-abortal infection is predicated upon the control of certain etiological factors. The vagina during labor and the puerperium harbors both pathogenic and nonpathogenic organisms. Those organisms of low virulence may at times under certain conditions become virulent. Puerperal infections etiologically are of two types, endogenous or autogenous and exogenous. Certain factors, namely, prolonged labor, excessive hemorrhage and extensive lacerations have been proven to predispose to the development of endogenous infections. Then, if we are to prevent and control this type of infection, the patient must not be allowed to remain in labor too long, extensive laceration must be avoided and blood must be conserved. We also know that certain

factors predispose to exogenous infections, namely: Lack of surgical asepsis, unclean instruments, unclean hands and unclean attendants. Conditions lowering the patient's resistance to infection, as excessive blood loss at delivery, anemias of pregnancy, dietary deficiency and toxemias. Those conditions increasing exposure to infection, namely, respiratory disease, attendants going from frankly pus or infectious to obstetrical cases, vaginal manipulation, wounds, including Caeserian section, episiotomy and lacerations resulting from operations, manual removal of the placenta, induction of labor, in fact, any obstetrical procedure attempted increases the exposure to infection. Of the last factor predisposing to the development of exogenous infections that of ignorance and carelessness, much could be said, suffice it to say the public must be taught the importance of adequate prenatal care and the attendant must be taught the fundamental principles of sound obstetrics and the principles of asepsis and antisepsis. The midwives must be taught and forced to observe a policy of "hands off" and to recognize the gross abnormalities of the prenatal period, labor and the puerperium.

The prevention of post-abortal infection is dependent upon two factors. We must find some way to curb the number of induced abortions. The proven method of treatment of abortion must be popularized.

SECTION ON PEDIATRICS

Dr. W. Myers Hunter, *Chairman,* Charlotte

CHAIRMAN'S ADDRESS

THE PRESENT OUTLOOK FOR THE PREMATURE

Dr. W. Myers Hunter, Charlotte

This paper is written with the idea of presenting some of the outstanding phases of the management of the premature and immature infants, the knowledge being obtained mostly from a review of the recent literature on this subject. The raising of a premature infant is usually considered a costly procedure, due to the long hospitalization and the detailed care that these infants demand. It is, however, a worth while effort, as is shown by the splendid results obtained by Hess, Cooly, Poole, Waring and others.

The importance of this subject can be emphasized by the fact that, first, 10% of all deliveries are prematures, second, prematurity is an emergency condition, third, prematurity is increasing, and fourth, prematurity alone is responsible for 50% of the infant mortality during the first year. In North Carolina in the last two decades, infant mortality has been reduced 50%. This has been accomplished largely however by prevention of death, after the first critical month. If these statements are true, it behooves us as pediatricians to pause, and see what we can accomplish in further lowering our infant mortality rate by more intensive efforts during this fatal first month of life.

Let us analyze the causes of prematurity, and see whether we can pass the responsibility to the obstetrician, share the responsibility with him, or accept it ourselves. Many investigators, Tyson, Mohr, Yaglow, Pflander and others agree on essential causes, but are at variance as to the importance of each. A cross section of their findings will reveal that.

1st—Factors resulting in normal prematures:

(1) Multiple pregnancy. (2) Injuries. (3) Falls.
(4) Heavy lifting. (5) Over work or physical exhaustion.
(6) Emotional disturbance. (7) Premature rupture of membranes. (8) Placenta praevia and Spinal abnormalities.

2nd—Those having a damaging influence upon foetus, thus lowering its vitality, such as:

(1) Syphilis. (2) Tuberculosis. (3) Multiple pregnancies.
(4) Toxemias. (5) Gynecological abnormalities requiring operative procedure. (6) Operative shock. (7) Acute infection.

What is a premature? Much confusion has arisen in the literature about mortality and morbidity because we have never adopted a common measur-

ing or computing system. The consensus of opinion seems to be that any product of conception, expelled from the uterus before the 39th week, regardless of cause, weighing less than five pounds and under seventeen inches in length, is a premature. This statement is open to controversy. The German law defines a premature as any child born between 29th and 39th week, before that an abortion, and after that full term.

The obstetrician should be aware of the fact that low forceps gives us our lowest mortality, next Caesarean, 3rd spontaneous delivery, and 4th Breech. As to the choice of anesthetic—Irving found that in 500 deliveries, 90% cried as soon as delivered, if no anesthetic was used. With morphin-scopalimine, 60% had to be resuscitated, with pento-barbital fewer resuscitations were necessary, and further found that the combination of pento-barbital with rectal ether was the anesthetic of choice.

Clifford of Boston says that prematures in the Boston Lying-In constituted only 3% of their deliveries, but were responsible for 50% of their deaths. In the past eleven years, as the result of improved nursing, and ward technique, the mortality had been reduced from 50% to 30%, but could not be budged below that point. In analyzing 900 infant deaths, he found that 85% of the deaths occurred in the first 48 hours. With the nursing, and other methods of improvement in resuscitation and care, making no impression whatever, he concluded that the problem should be approached from an obstetrical angle. He found a striking decrease in infant mortality with each eight ounce increment in body weight. If he could increase body weight, he would salvage many, otherwise doomed. It was discovered that the infant gained four to five ounces in the sixth lunar month, six to eight ounces in the seventh month, and twelve ounces a week in the ninth month, so that if pregnancy could be prolonged two weeks, 1-½ pounds would be obtained, thereby enhancing the baby's chances 20 to 30%.

Scannon and Caulkins had previously demonstrated that the occipito-frontal diameter was a true index to age, so Clifford, after exhaustive study in 600 cases with his X-ray metric study, has devised a rather accurate and valuable technique of determining age in utero. As a result, many pregnancies can be prolonged until a viable baby is assured or, contraversely, if the obstetrician has been waiting for a baby of sufficient size, he may safely induce labor without exposing the mother to prolonged hazards. The toxemias offered the greatest problem; if delivered too early they would die of the asthenia of prematurity, and if delivered too late the placenta would be grossly infarcted, or prematurely separated, resulting in stillbirth. The result of thus timing the deliveries almost eliminated the stillborn, with an increase of the prematures from 27 per 1,000 to 34 per 1,000. His investigations confirm other findings, that the safest possible method of delivery was vertex, low forceps and wide episiotomy, and the most fatal was Caesarean. As a result of these findings it appears that our hope and responsibility in the lower bracket of the 1,500 grams or under, where the mortality is so appalling, may be lessened.

It appears then that we have an obstetrico-pediatric problem, both branches assuming their respective responsibility. The obstetrician, when called to deliver before maturity, should take his pediatric consultant, in order to preserve the best interest of both mother and offspring.

Now as to the responsibility, we as pediatricians must assume. Dr. May says if handled intelligently from the minute of birth, the mortality is reduced 30%. The essential feature to be treated by us is to remember that 85% of the deaths occur in the first 48 hours, so it behooves us to act promptly, and intelligently. The most important time in a premature's life is between birth and the institution of methods to prevent thermal shock.

Hess in the largest premature station in the world, analyzed 1,623 cases between 1922-1933, and reduced his mortality from 43 to 24% in all brackets, which he attributed to proper attention to theromlability, stopping of radical methods of resuscitation, only using oxygen, intelligent nursing force, bringing babies to hospital in his electrically heated ambulance, intelligent feeding, rest for sixteen hours, extreme care in preventing respiratory infection, and coöperative education of the obstetrician. Minor contributory helps, such as fewer parcenteses, and spinal punctures. He does not advocate use of the Drinker apparatus, and advises, if possible, to allow the cord to pulsate from one to five minutes before severing, thereby permitting the baby to obtain from 30 to 60 c.c. more maternal blood.

He recommends only oxygen for cynosis while many authorities recommend from 1 to 10% carbon dioxide mixture. Eastman contends that there is no such need, as there is already an existing acidosis which would be aggravated by such a procedure as adding CO_2. Stimulation may be required for both respiratory and cardiac systems. Many advocate caffeine, aromatic spirits of ammonia, coramine, alfa lobelein, etc. May believes prematurity is characterized by an adrenal deficiency, and gives one minim of adrenalin every hour or two increasing or decreasing according to the activity. Stoesser and Perlman give whole blood routinely, realizing how prone prematures are to intra-cranial hemorrhages. The fluid intake of course must be maintained, as it is necessary to provide from one-seventh to one-fifth of body weight in fluid in 24 hours. Hartman's Solution is used routinely in some clinics with varying success. Wagner of the Graeme Mitchell Clinic believes every premature to be a potential intra-cranial, and uses whole blood injections routinely. His investigations show that two-thirds of these coming to autopsy show intra-cranial hemorrhage.

Ringer's Solution is recommended by Hess. Feeding should begin in the second 24 hours, breast milk by preference, next evaporated milk, acidified or peptonized. The caloric value should be high, some advocates preferring a high carbohydrate and others increasing the proteid intake.

The method of introducing the food of choice varies. Hess advocates gavage, which is condemned by Dunham because of danger of trauma and

aspiration pneumonia. May prefers the Breck feeder, while Sauer prefers a pipette, with a small rubber tubing four or five inches long which reaches to the back to the pharynx, thus allowing the food to run into the stomach without the effort of swallowing. Do not be too zealous in your desire for a rapid gain, as gastro intestinal complications might ensue and a happy ending be defeated.

The toll of life, formally exacted by respiratory infections, has been reduced in all clinics, due to extreme precautions and careful technique. Mohr and Bartelme have reduced their otitis media 50% and have not had a mastoid complication in four years. They are opposed to paracentesis. Pneumonia mortality has shown a corresponding reduction.

The ultimate fate of the premature is, of course, of paramount importance to us as pediatricians. Capper of Vienne believes that they always show a predisposition to respiratory diseases, and that they furnish the backward school child, and are potential phycopathics. Yeppo says that raising of the weak premature could not be deemed sociologically or hygienically advisable. Waring of Georgia reports that the premature infant is well worth the effort, both as to growth and development, and has clinical evidence to substantiate this fact.

Mohr and Bartelme declare, if due allowance is made for prematurity, as compared to their Siblings, that there was no difference in respect to mental age, time of eruption of teeth, onset of walking, and rapidity of learning bladder control, etc. The personal-social behavior of the premature was consistently superior, possibly because of the early careful attention. Pfaundler finds that physical growth (that is stature) for the first five years runs behind, then coincides and runs parallel. The weight curve resembles that of the length, but tends to equalization a year or two later. Mentally, prematures average four to six months before taking interest in their surroundings, are about six months behind, especially in speech which averages two years, with tendency to imperfections, which are later almost totally overcome.

A follow-up of 107 prematures—ages eight months to seven years classified by the Gesell test. The chronological age corrected for the period of prematurity was used as the basis of estimate of performance.

43 per cent were classified as average,
35 per cent as below average, and
22 per cent as above average.

According to the Binet test of the same children, two-fifths were average, two-fifths of superior intelligence, and one-fifth was below average; three were mentally defective. Not a bad comparison with what we would consider the normal child group.

In the Berlin Clinic 7.4% were imbeciles. Little's disease was present in 3%. Sarvan of Germany found no more social misfits in his group of prematures than in the full term. Osselman & Gries of Germany found

few abnormalities in their group. Hess & Lundeen of this country concluded that these children did not differ from full term infants as to mental age, if allowance for the period of prematurity was made. Other European investigators agree in most essentials.

Most writers who accuse prematurity and its tendency to intra-cranial hemorrhage as being responsible for later mental retardation and spasticity lose sight of the fact that congenital brain defects and encephalitis not related to prematurity may be strong contributing factors.

Premature births gave us such men as Newton, Cuvier, Rousseau, Voltaire, Victor Hugo and others.

CONCLUSION

The pediatrician's best opportunity for further lowering our infant mortality rate should, in coöperation with the obstetrician, be more intensely directed to a consideration of the premature problem especially in time and method of delivery and the realization that the care of the premature is a medical or pediatric emergency.

SOME UNUSUAL CASES OF MALARIA

By T. M. Watson, M.D., Greenville, N. C.

I am going to report four cases of malaria in which unusual symptoms were present. In these cases, the diagnosis was not as simple as some of the literature on the subject would lead one to believe.

Many physicians think that all that is necessary to make a diagnosis of malaria is to find out from what section of the State the patient hails, glance at the characteristic temperature curve, and palpate the greatly enlarged spleen. Some of you boys from the mountains and Piedmont North Carolina feel that it is impossible for a child who was born in your section of the country to have malaria unless he or she has taken a trip to the eastern part of the State. Many fail to have as much respect for the disease as it deserves, and when a diagnosis is made say, "Oh it's just malaria," order a little coco-quinine, forget about it, and leave organisms in the blood to set up chronic infection and give trouble later on.

There are as many cases of malaria in infants and children in which there is no elevation of temperature as there are with fever. Where there is fever, the curve is just as likely to stimulate that seen in typhoid fever or tuberculosis as it is to follow the every other day elevation. Children rarely have chills, no matter how severe the infection. In the infant and young child splenic enlargement is not the rule, and is rarely seen except in cases of long standing.

Malaria is probably more widely scattered throughout our State than is generally believed. I remember, several years ago, a physician from a city in the North Carolina mountains was on his way to Wrightsville Beach. He stopped at The Babies Hospital to get some capsules of quinine to protect himself from the ravages of the Anopheline during his stay in

what he considered an infested area. He was in the midst of telling us what we were missing by not living in his high altitude city, where no malaria mosquito had ever visited, when an acutely sick child was brought in. The discourse was discontinued and we all proceeded to try to find out the cause of the fever, vomiting, etc. The physical examination was negative. A stained smear showed the red cells loaded with schizonts of tertian malaria.

The child was three years old. He was born in a city in the mountains of North Carolina, and had left his home eight hours before we examined him for his first visit to the eastern part of the State. He had been in the mountains all his life and still he had acute malaria. He was a patient of the doctor who had just been declaring their home town absolutely malaria free.

CASE REPORTS

Case 1. Baby, seven days old. Born in a hospital. On the fifth day after a normal full term delivery there was an elevation of temperature (102), and the patient vomited two feedings. There was no other evidence of infection nor dehydration. The urine was normal. Study of the blood smear showed several malarial rings. Quinine sulphate was started by mouth. After 48 hours the baby seemed normal. Repeated blood examinations since that time have been negative. The young fellow is now two years old and is a perfectly normal child. The mother had acute malaria when the baby was born.

Case 2. Child three years old. Family history negative. Birth normal. Never nursed the breast, but had satisfactory feeding all her life. No previous illness except an occasional mild nose and throat cold. At the age of two and one half years she seemed perfectly normal. Four months before coming to us she lost her appetite and became restless and fretful. The mother did not consult a physician at that time because she thought the decline was due to teething. Four months after the onset of the abnormal state, we saw the baby. Examination showed nothing abnormal except moderate malnutrition and anaemia. There was an occasional pus cell in the urine. The intradermal tuberculin (1-1000) was positive. The white blood count was 6,000. A blood smear was made but was not examined at that time, as the attending physician was so busy looking for tuberculosis that he forgot it. Examination of the chest (physical and X-ray) was negative. Excepting the positive skin test, no direct evidence of tuberculosis was found at that time nor since. We have been unable to locate a contact. After working on the tuberculosis lead for five days, the blood smear, which was made on the day of the original examination, was stained and examined. In it we found five tertian schizonts in a few minutes study. Antimalarial treatment was started.

Atebrine (gr. 1 1/2) and plasmochen (gr. 1/6) were given daily for six days then six grains of quinine sulphate each day for one month.

A week after the treatment was started the patient was eating much better and her color had improved. It has been two years since this child was discharged from the hospital. So far as we are able to determine, she is entirely normal.

Case 3. Boy, 4 years old. Family history negative. Normal birth and infancy. Measles two years before onset of present illness. No other illness. One year before coming to the hospital he began to lose ground. He became irritable, restless, and ate only what was forced. He had low grade fever at irregular intervals. When admitted to the hospital, the child had taken no food and practically no fluid for four days. The stools were normal until 24 hours before coming to the hospital when he was given a dose of castor oil. After that they were watery.

Physical Examination. Poorly nourished boy. Markedly dehydrated—skin dry and inelastic. Conjunctiva dry. Eyes sunken. Comatose. No evidence of infection in the ears, nose, nor throat. Physical and X-ray examination of lungs negative. Heart negative except for marked acceleration of rate (about 180). Abdomen scaphoid. Liver felt one-half inch below the costal margin. Spleen felt at the costal margin. Reflexes negative.

The white blood count was 4,000. The Hg. at the time of admission was 70%. After the fluid balance had been partially re-established, the Hg. was 35%. The spinal fluid was negative. The urine showed 2 plus albumen—otherwise negative. No parasites nor ova were found in the stool. The stained blood smear showed eight or ten malaria parasites (rings) in every field. In many cells we saw as many as three rings.

An effort was made to restore the fluid balance by the administration of large amounts of Hartman's solution and glucose parenterally, but dessication had advanced to such a point that the tissues would not hold the fluid. Repeated transfusions were given. Quinine was given each day intravenously. The child died on the eighth day in the hospital.

Case 4. Last June, a three-year-old girl was brought to our hospital. She was unconscious and apparently moribund. The family history was negative. Birth and infancy normal. There was a history of occasional colds but these were mild and free from complications. No other illness.

Three months before the onset of coma the child became irritable and her appetite, which had always been excellent, gradually became very poor. She lost weight and color steadily. There was a little elevation of temperature each afternoon for a month before she came to us. During this time the mother had given three doses of calomel followed by castor oil, and a teaspoonful of Grove's chill tonic each day. Twenty-six hours before coming to the hospital the child drank a glass of milk and ate a piece of bread. Three hours later she complained of pain in the abdomen and had a convulsion. She was unconscious for 24 hours before coming to the hospital.

Physical Examination. Well developed, fairly well nourished little girl. Skin moderately dry, very cyanotic. Temperature 107°. Mucous mem-

branes moderately dry and blue. Eyes—pupils react to light—fundi normal. Ears negative. There was a fairly large adenoid mass and the tonsils were somewhat enlarged, but it did not impress me that they were giving much trouble. Nothing abnormal was found in the lungs. The heart rate was very rapid and the sounds feeble. I heard no murmurs. The abdomen was greatly distended, particularly in the epigastrium. This precluded any detailed examination of the abdominal organs. The extremities and reflexes were negative. The urine was negative except 2 plus acetone. The w. b. c. was 7,000. After searching half an hour we found two malarial parasites in the stained smear. The spinal fluid pressure was normal, as was the cell count.

Treatment. The stomach was washed out. Practically all the food ingested 28 hours before was still in the stomach, where the castor oil, which was given later, had passed it by and gone on thru. After the lavage, the whole picture changed. The abdominal distention was relieved. The breathing became easier. The heart sounds improved and the rate slowed down. Within an hour the temperature was down to 102°. Quine dihydrochloride (gr. III) was given intravenously twice a day for three days until the patient regained consciousness. After that quinine sulphate (gr. vi) was given each day for one month.

During the period of coma, the patient was given saline intraperitoneally and glucose solution intravenously.

The youngster recovered rapidly. At the end of a month she looked like a tobacco town under the New Deal.

Conclusion—Don't forget malaria.

PYURIA—ETIOLOGY AND TREATMENT

By Marion Y. Keith, M.D., Greensboro

In presenting this paper on Pyuria I wish to call your attention to some of the common conditions which are responsible for pus in the urine of children, with special stress upon the chronic conditions which are often overlooked, and with special emphasis upon treatment. I wish to divide this paper into two parts. First, the consideration of intermittent pyuria. Second, continuous pyuria—with treatment of each.

Cystoscopic examination and urethral catheterization are means by which we can determine the site of infection in the upper or lower G. U. passage. However, it is rare and only used in exceptional cases and we must be satisfied with our microscopical studies and laboratory findings of the urine in intermittent pyuria.

It has been shown experimentally that infection of the upper urinary tract often takes place either by way of the blood stream or by way of the bladder when there is no obstruction or stasis to the outflow of urine. Some claim that infection from the alimentary or intestinal tract by means of the lymphatic system, is quite a common source. Ascending infections

to the kidney pelvis from the bladder, ascend either by means of the periureteric lymphatics, or by the lumen of the ureter.

The frequency of the infection in female infants makes us believe that this is an ascending type of infection, because of the anatomy of the structures, and that the colon bacillus is so frequently found. This has been definitely proven by Helmholtz and Beele to be twice as common in the female as in the male—the soiled diaper being the common source of infection. We all agree that foci of infection, such as tonsils, adenoids, sinuses, joints, gall bladder, teeth, skin, and upper respiratory infections all play an important part in producing pyuria. Infection in these conditions is generally by means of the blood stream or lymphatic system.

Pyuria in the newborn should be considered in every case of unexplained temperature. As pointed out by Sauer, it is often overlooked and in a series of fifteen cases, thirteen were in boys. However, in later infancy there is a greater increase in females over the male. Organisms that are etiological factors in pyuria are colon bacilli or the gram negative bacilli, which were present in 75% of the cases, at the Mayo Clinic. This also includes a subcolon group. Staphylococcus pyogenes were found to include 8% of cases. Staphylococcus Hemo. 7% of cases. Pneumococcus, bacillus proteus, Freilander's bacilli, bacillus pyocyaneus, and G. C. have been occasionally noted as an agent.

I will not attempt to discuss in detail the symptoms of acute pyuria as they are generally known. However, some of the common symptoms of the above infection may be characterized by an intermittent fever, chills, profuse sweats and a degree of toxicity which is not in proportion to the temperature. Pain in the back may not be present unless there is definite involvement of the kidney substance or a perinephritic abscess existing.

In the above discussion I have only briefly mentioned pyuria with fever because of its comparative ease in diagnosis and treatment. The chief purpose of this paper is to call your attention to some of the common conditions causing chronic pyuria with absence of symptoms and commonly overlooked. These conditions of chronic pyuria with the absence of fever often warrant a more thorough investigation from a genito-urinary standpoint than pyuria with fever, and their symptoms generally date from the onset of birth or shortly afterwards. We may divide these cases into four subdivisions. First, those due to foci of infection as previously mentioned above, which have become chronic. Second, congenital deformities of the genito-urinary tract. Third, obstructive pathology. Fourth, tuberculosis of the genito-urinary tract.

In the investigation of a child with chronic pyuria, the elimination of foci of infection cannot be too strongly emphasized. Removal of infected tonsils, adenoids, teeth, sinuses, etc., as we all know, is most important in the first steps of treatment of this condition.

However, when the above investigation has been completed we often find that other causes may exist such as:

1. Aberrant vessel to the lower pole of the kidney—these arteries arise from the renal artery, cross the ureter there and in the lower pole of the kidney causing a constriction or an obstruction of the ureter. (A film of this condition will be shown later.)

2. Often we find double pelvi of the kidney with complete duplication of the ureter as a source of infection. (Smith)

3. I would emphasize congenital stricture and kinking of the ureter as a cause, certainly one should bear in mind the so-called respiratory kink of the ureter which is caused by respiratory movement. It is not pathological but often diagnosed and treated as a condition.

4. Valves of the ureter may be mentioned but are very rare and difficult to diagnose.

5. Stricture at the orifice of the ureter is a simple but most constant finding.

6. Diverticulum of the bladder is an unusual finding which is not necessarily present at birth but develops soon after birth as a result of vessical neck obstruction, or obstruction at the neck of the bladder. However, all congenital obstructions at the neck of the bladder do not produce diverticulum unless there is a congenital weakness in the musculature of the bladder which is usually located at the junction of the ureter with the bladder. (Kenneth Blair)

7. Another cause of pyuria due to congenital deformity may be classified as a cord bladder. This term "cord bladder" gets its name from the fact that there is a degeneration of the sympathetic nervous system which often follows acute infections but may be also congenital. We briefly review the nerve supply of the bladder to explain this condition. The bladder is supplied by the sympathetic nerves which are its constrictors. It is also supplied by the para-sympathetic nerves which act in opposition to the sympathetics or as dilators to the bladder, therefore, any condition resulting in a degeneration of the sympathetic nerves will leave the para-sympathetic in control and as a result a hugely dilated bladder with stasis. This condition is often overlooked. We may compare this to Hirschsprung's disease.

8. Congenital stricture of the urethra is a more frequent cause in the male than in the female, although I have had a case in the female. X-ray film will demonstrate this condition. (Jane Ferguson)

9. Posterior urethral valves of which there are four different types is a common cause in the male infant. This condition is rare and often overlooked. (Plate—negro boy)

10. Phymosis—stricture of the meatus urethra—may be mentioned as a more common cause.

Stones usually occur in the pelvis of the kidney and less frequently in the bladder which may be a cause of pyuria. This condition, however, is not as frequent in infancy or childhood as that of adult life.

Tuberculosis of the genito-urinary tract should receive much consideration and a thorough investigation. Constant pyuria with a persistent alkaline urine should arouse the suspicion of tuberculosis of the urinary tract. If possible, T.B. foci elsewhere in the body should be sought and ruled out. In this connection, I wish to emphasize the preference of the potato culture over the guinea pig inoculation in the diagnosis of T.B. of the urinary tract. (Explain in detail.)

The advantages of the potato culture are its simplicity in culture, rapidity of diagnosis in comparison to the guinea pig inoculation. (4^{p}—6^{g}) The potato culture can be interpreted by the average physician in his own laboratory while the guinea pig method requires a trained technician or a pathologist.

In the treatment of pyuria, the elimination of foci of infection cannot be over emphasized. It is well known that it is essential that fluids be frequently given in treatment of such infections except those on the Ketogenic diet. As to drug therapy, urotropin seems to be of the most benefit. However, the first steps in the use of urotropin must be to render the urine acid to a PH—at least 5 or 5.5. To determine the degree of PH ion concentration, I emphasize the now very simple methyl-red paper as an indicator. This paper turns a deep red when placed in a urine with a PH 5.5. or below, which is necessary for urotropin to be of its greatest value. Also the phenol-chlor red method can be used in this determination. The addition of ammonium chloride 2 grains—Q 4 hours in water—is a great aid in rendering the urine to the desired acidity. This is preferable to acid sodium phosphate which is commonly used. The treatment should not be extended over two weeks to determine if this manner of treatment will be successful.

Pyridium and serinium are common urinary antiseptics which have been proven by Gillespie of the Mayo Clinic to be of limited or little value. He has found that their antiseptic qualities are lost or reduced in the urine.

In the pyelitis with fever which resists the above treatment I have found urotone in a solution given intravenously a very effective means of treatment. (One ampule to 500 c.c. of saline—32 grains to the ampule.) There are several other preparations which are less effective in treatment. Recently Helmholtz, in connection with his studies of epilepsy, found associated with epilepsy and bacciluria that the ketogenic diet played an important part in rendering the urine sterile. In a recent article Clark and Keltz have given a simplified ketogenic diet which I have found to be most effective in the treatment of pyuria, most especially those cases that would not respond to drug therapy. (Diet in detail with slide.)

The ketogenic diet creates a ketosis within three to five days which in itself acts as a very effective urinary antiseptic. This ketosis is produced

by the very high fat diet with a low protein and carbohydrate intake. A simple test when such is produced is by means of the ferric chloride test of diacetic acid. When ketosis has rendered the urine most antiseptic the ion concentration is that of a PH of 5.5 or less and hastens the concentration of the ion content to the desired point, which simple test has been previously described.

In conclusion I wish to emphasize, first, that pyuria of long standing should be considered of grave importance and congenital defects of the urinary tract ruled out. Second, that urotropin with ammonium chloride is more effective in treatment of pyuria than other drug therapy and in most cases which do not respond in two weeks' time the simplified ketogenic diet is usually effective. This diet applied in short courses may be prescribed in a practical way by the physician in the office with very satisfactory results.

Where the ketogenic diet or ammonium chloride and urotropin have been prescribed, the fluid intake should be limited in order to create an ion concentration of PH 5 or 5.5, which has been found of greater antiseptic value than the forcing of fluids as has heretofore been highly prescribed.

Five case reports—of congenital G. U. conditions.

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THE COMPOSITION OF AN AVERAGE PEDIATRIC PRACTICE

By Arthur H. London, M.D., Durham

During post-graduate study, the writer often asked the question, "What type of case will be most frequently encountered when practice is first begun?" The literature failed to give information on this subject; so from the onset of private practice, a system of records has been used which is designed to answer this question. The history, examination, and progress notes are taken in an abbreviated form and then dictated to the stenographer who types them on 4x6 inch cards. These cards are kept in an envelop, on the outside of which is written the name of the patient. In a space under this is listed the diagnoses which may occur in that patient. On the opposite corner is printed a list of the immunizations to be done

and as these are given they are checked off. With this method, a glance at the patient's card shows the diseases he has had and the immunizations which have been done or should be done. These cards are filed alphabetically under the patient's name. A separate diagnosis file is kept and under each disease the name of the child is placed when that disease occurs. A place is checked by the diagnosis on the patient's card when that diagnosis is placed on the index card. When the diseases which occur frequently have been filed once, the process is not repeated. Thus the figures to be given represent the number of children in which the disease has occurred and not the number of times the disease has occurred.

This paper is an attempt to present an analysis of the different diagnoses which have occurred in the first 1500 children to come under my care. Alrich[1] and Davison[2] have both written similar articles; the former giving the composition of a suburban practice, the latter of hospital in-patient and out-patient cases. The children making up this group come from urban, suburban, rural, and industrial districts.

TABLE No. I

92	NEWBORN AND CONGENITAL DEFECTS		6.13%
Prematurity	28	Absence of Vocal Cords	1
Hematoma Sternomastoid	3	Accessory Ears	1
Cephalhematome	1	Supernumerary Toe	1
Fractured Clavicle	1	Dedundant sigmoid	1
Intracranial Hemorrhage	3	Imperforate Anus	1
Atelectasis	6	Atresia of Esophagus	1
Omphalitis	1	Hernia of Umbilical Cord	1
Tetany of the Newborn	2	Hypospadias	1
Congenital Syphilis	7	Exstrophy of Bladder	1
Cyst of Lip	2	Encephalocele	1
Cyst of floor of Mouth	2	Spastic paraplegia	8
Hare lip	2	Thymus Hypertrophy	6
Central Scotoma	1	Amyotonia Congenita	1
Dermoid of Cornea	1	Congenital Heart	7

All infants weighing less than five pounds and who were unable to maintain a normal body temperature under routine newborn care were classified as prematures. All of these infants were fed on unsweetened evaporated milk. Occasionally lactic acid drops were added to the formula. These children were kept in warmed beds but in the ordinary newborn nursery.

It is interesting to note that atelectasis was diagnosed twice as frequently as intracranial hemorrhage and I believe if the infants who do badly immediately after birth were more thoroughly examined, fewer diagnoses of intracranial hemorrhage would be made. The spastic paraplegias listed may have been due to intracranial hemorrhage, yet a review of the neonatal and early infancy period of these children do not reveal any symptoms suggesting intracranial hemorrhage.

The thymus hypertrophy cases all had periods of cyanosis and an enlarged substernal shadow, both of which disappeared following X-ray therapy.

TABLE No. II

529	ROUTINE CARE		35.29%
Feeding Regulation	403	Pylorospasm	15
Appetite cultivation	29	Pyloric Stenosis	5
Tongue tie	4	Adherent foreskin	15
Colic	4	Adhesions of labia	2
Ricketts	7	Phimosis	10
Hemangioma	8	Umbilical Hernia	15
Thrush	9	Hematome Sternomastoid	3

Evaporated milk has been used routinely in feeding all normal babies except where the parents objected to feeding the children from a can.

No attempt has been made to include the diagnoses, behavior problems and psychological maladjustments, in the diagnoses lists because in practically all patients there is some behavior problem or some minor psychological maladjustment which requires the thoughtful attention of the pediatrician.

TABLE No. III

604	IMMUNIZATIONS		40.26%
Diphtheria	217	Small pox	70
Schick test	129	Typhoid	78
Pertussis	89	Measles	14
Poliomyelitis	7		

The relatively small number of immunizations is not a reflection upon the diligence of the physician nor the willingness of the parents to have the children immunized, but rather an index to the activity of the local health department. Diphtheria immunization is advised in all children six months of age or over and a majority of the 403 children listed as feeding regulation cases have been immunized. Those not listed here have received diphtheria toxoid at the health department free of charge. A most striking example is in the figure for typhoid and smallpox immunization. Many parents insist upon waiting until the child is of pre-school age and having these immunizations given free at the pre-school clinic. Others, when immunization is suggested, frequently state that they will go to the health department where this can be obtained free of charge. The local health department has not as yet undertaken the task of whooping cough immunization; so, as the figures show, more children were immunized to pertussis in a period of four months than were given typhoid or smallpox vaccine over a period of four years.

Convalescent serum was given in the cases listed as having measles and poliomyelitis immunization.

TABLE No. IV

236	GASTRO-INTESTINAL DISORDERS			15.73%
Diarrhoea	109	Glossitis	2
Dystentery, bacillary	24	Gastritis	12
Acute intestinal intoxication	1	Appendicitis	9
Amoebic dysentery	1	Meckel's Diverticulum	1
Pylorospasm	15	Impacted feces	1
Pyloric stenosis	5	Hemorrhoid	1
Catarrhal Jaundice	5	Rectal polyps	4
Cardiospasm	2	Rectal prolapse	1
Duodenal spasm	1	Constipation	12
Spastic Colon	10	Hypoglycemia	1
Mesenteric adenitis	6	Intestinal influenza	13

All children with loose stools sufficiently severe to demand an office or home visit other than those with bacillary dysentery have been included under the term, diarrhoea. No attempt has been made to classify them as infectious, dietary, parenteral diarrhoea, ileo-colitis, etc. I was surprised to find the incidence so low. Of the 109 cases, 22 were severe enough to require hospitalization. In only one case was mastoidectomy done and in this case the diarrhoea had ceased and the operation was done because of the chronic draining ear and not for the diarrhoea.

Most of the bacillary dysentery occurred during one summer season and all came from rural districts.

Four of the five cases of pyloric stenosis were operated upon. A definite tumor was found in each and immediate relief followed the operation. The fifth case was not operated because of the parents' objection and finally recovered, but not without a very stormy course. It is worthy of note, because of the scarcity of such reports in the literature, that one of the operated cases was a negro infant and the tumor found was the largest of this series.

The symptom complex leading to the diagnosis of spastic colon included: a feeling of fullness after the ingestion of a small amount of food, abdominal pain, especially during or after a meal, the passage of hard, lumpy stools, and X-ray evidence of spasticity of the colon. Headaches, lassitude, coated tongue, and foul breath were common complaints. The symptoms and signs responded well to a bland diet, mineral oil, and belladonna.

Children suffering with mesenteric adenitis have gastric symptoms similar to those with spastic colon. In addition to this there is a history of repeated attacks simulating appendicitis, yet all of the signs of appendicitis are not present. These children usually have had repeated upper respiratory infections. Abdominal examination fails to reveal anything characteristic but rectal examination frequently reveals the presence of enlarged glands. Appendectomy relieves these symptoms. Whether the results are from the appendectomy or from admission of air into the peritoneal cavity is a disputed point.

The diagnosis, intestinal influenza, is presented with the full realization of its questionableness. However, the symptoms so classified occur chiefly at the time of year when respiratory diseases are most prevalent and especially during an influenza epidemic. Frequently other children in the family will have the respiratory symptoms of influenza at the same time.

TABLE No. V

656	ACUTE INFECTIONS OF THE UPPER RESPIRATORY TRACT	43.73%
	U. R. T. Infections (Including Rhinitis, Pharyngitis, Tonsillitis, Catarrhal Otitis)	482
	Otitis Media, purluent	87
	Adenitis, cervical	27
	Laryngitis (Streptococcic)	1
	Conjunctivitis	16
	Sinus infection	14
	Bronchosinusitis	10
	Retropharyngeal abscess	2
	Peritonsillar abscess	1
	External Otitis	3
	Croup	13

This group constitutes the bulk of pediatric illnesses. Four hundred and eighty-two of the 1500 children were seen once with upper respiratory infections. A conservative estimate of the number of times the diagnosis was made would be five times this.

Only those cases in which paracentesis was done or in which the tymphanic membrane ruptured spontaneously were classified as purulent otitis media. It is of interest that mastoiditis occurred in only one of these, an infant of four months. The remaining cases of mastoiditis reported later were referred.

Only cases of epidemic conjunctivitis are listed here. Those occurring during an upper respiratory infection are included under that diagnosis.

Bronchosinusitis is used to describe the children who come in with the chief complaint of chronic cough. Examination of these reveals coarse rales at the bases posteriorly, congested nasal mucus membrane, and a post-nasal drip. X-ray of the sinuses discloses evidence of sinusitis and the cough promptly disappears following treatment of the sinus infection.

TABLE No. VI

222	ACUTE PULMONARY INFECTIONS	14.80%
	Pneumonia	76
	Empyema	10
	Bronchitis	23
	Influenza	79
	Pleurodynia	14
	Bronchiectasis	4
	Hilum Tuberculosis	14
	Pulmonary Tuberculosis	1
	Lung Abscess	1

The diagnosis, pneumonia, given here includes both lobar and broncho pneumonia. No case was so diagnosed unless there were definite signs of consolidation on physical examination or by X-ray. Thirty-six of these were treated in the hospital; the remaining ones at home. The only therapy other than symptomatic has been blood transfusions. The benefit of this procedure has been repeatedly reported.

Several of the empyemas were referred and were classified as such and not as pneumonia with empyema. This accounts for the apparent high incidence of empyema in this series.

The children recorded as having bronchitis had fever, cough, and a variety of rales in the chest. Some of these probably should be classified as pneumonia. The cases with a cough and scattered rales in the chest following upper respiratory infections are included in that diagnosis.

The cases of pleurodynia all occurred during one epidemic and were quite alarming at the onset. The children presented a picture of either toxic pneumonia or ruptured gastric ulcer, depending upon whether the pain was in the chest or the abdomen. The treatment was symptomatic and all of this series recovered spontaneously.

The cases of bronchiectasis have done well with postural drainage and elimination of foci of infection in the upper respiratory tract. Bronchoscopic treatment was not resorted to in any of these.

The one case of lung abscess was due to Vincent's organisms and responded well to arsphenamine therapy.

TABLE No. VII

278	ACUTE INFECTIOUS DISEASES			18.53%
Measles	38	Poliomyelitis	3
Mumps	11	Rheumatic Fever	2
Chicken pox	25	Chorea	1
Pertussis	86	Erysipelas	6
Scarlet Fever	12	Vincents infections	22
German Measles	11	Septicemia, streptococcic	4
Diphtheria	17	Septicemia, staphylococcic	1
Roseolar Infantum	27	Tetanus	2
Typhoid	8	Rocky Mountain Spotted Fever	2

Most of the mumps and chicken pox cases were cared for by the parents and the physician simply notified that the disease had occurred. Record of this was made on the child's card but only those who were seen were placed on the diagnosis file. The relatively few cases of measles seen is again accounted for by the activity of the health nurses who diagnose the cases, placard the house, and suggest therapeutic procedures. The number of cases given here are the number actually seen. Whooping cough cases oftentimes become a little too difficult for the health nurse; thus the number of cases of whooping cough seen is more than double the figure for measles.

Most of the cases of diphtheria occurred in rural districts. Only those with a membrane and a positive culture were so diagnosed. Six of these were laryngeal cases requiring either intubation or tracheotomy.

The cases of Rocky Mountain spotted fever occurred in a rural district. The two children lived within a mile of each other but their illnesses occurred a year apart.

TABLE No. VIII

364	ROUTINE EXAMINATION	24.26%
	Postural Defects	12
	Tonsil and adenoid abnormalities	98
	Functional Heart Murmurs	15
	Flat Foot	4
	Knock Knees	7
	Dental Caries	55
	Bow Legs	3
	Routine Examinations	52
	Tuberculin Tests	118

This table includes only older children who were brought in for physical examination. The 52 listed as routine examination were children in whom no abnormality was found.

TABLE No. IX

99	ALLERGIC CONDITIONS	6.60%
Asthma	35	Hay Fever 3
Eczema	45	Abdominal Allergy 2
Urticaria	12	Dermographia 2

The high incidence of asthma is in accord with the observations of other physicians in the community. It has been suggested that the contamination of the air with tobacco dust might account for this yet very few of these patients show any skin sensitivity to tobacco extract.

Serum sickness has not been recorded as it has been considered an expected sequella to serum therapy and not a complication.

All cases of eczema from the mild infantile facial type to the severe general type are included here. In the treatment of these, skin tests with the elimination of the positive reactors has been disappointing. Most of the mild cases have cleared up with the application of the usual tar preparations. The more severe ones have shown temporary improvement with applications to the skin and have all eventually cleared up with the passage of time.

TABLE No. X

63	ACCIDENTS	4.20%
Miscellaneous injuries	25	Dog bites 9
Burns	12	Sprains 8
Concussion of Brain	2	Swallowed Foreign body 4
Skull Fracture	3	

Miscellaneous injuries include lacerations, etc., not requiring major surgical procedures.

None of the cases of dog bite have been given anti-rabies treatment.

TABLE No. XI

108	DISORDERS OF THE NERVOUS SYSTEM			7.20%
Anorexia	29	Erbs Palsy		1
Eneuresis	5	Bell's Palsy		1
Convulsions	16	Meningismus		1
Stammering	2	Encephalitis		5
Epilepsy	11	Meningitis		19
Petit Mal	2	Meningococcic	3	
Hysteria	1	Pneumococcic	3	
Pavor Nocturnis	1	Influenzal	2	
Somnambulism	1	B. Coli	1	
Masturbation	3	Tuberculous	7	
Idiot, unclassified	5	Mumps	1	
Microcephalic Idiot	2	Aseptic	2	
Hydrocephalus	3			

The unclassified convulsion cases represent those children who have convulsions with the onset of infectious diseases and other disturbances who do not show any evidence of organic disease of the nervous system.

Therapy of the epileptics has been extremely disappointing and none of these cases have been permanently relieved by any of the therapeutic procedures tried, although ketogenic diets, dehydration therapy, luminal, bromides, have all been given a trial.

TABLE XII

241	CUTANEOUS LESIONS		16.06%
Local Infections	27	Ingrowing toe nail	7
Toxic Erythema	7	Cellulitis	2
Dermatitis	3	Straw Itch	1
Ringworm	5	Vitilligo	1
Poison Ivy	12	Intertrigo	12
Impetigo	57	Seborrhoeic dermatitis	11
Insect bites	13	Molluscum contagiosum	1
Pityriasis rosea	1	Papular urticaria	3
Scabies	16	Lichin Urticaria	1
Paronychia	8	Urticaria Pigmentosa	1
Stye	8	Granuloma Annulare	1
Eurunculosis	5	Erythema Multiforme	1
Herpes Zoster	2	Heat rash	24
Acne	11		

The comparatively large number of cutaneous lesions suggests the advisability of including more time for the treatment of skin diseases in our medical school curriculums.

TABLE No. XIII

41	NURITIONAL AND GLANDULAR			2.73%
Overweight, low B. M. R.	7	Hypertension, adolescent	2
Frohlich's Syndrome	2	Hyperthyroid	3
Malnutrition	9	Goiter	1
Adenitis, not cervical	11	Cretin	2
Diabetes	3	Small Stature	1

Two of the cases of hyperthyroidism were of the adolescent type and subsided after this period was past. The third case was a child of ten years who presented early toxic symptoms. She was given X-ray therapy over the thyroid and these symptoms subsided. The one case of goitre was seen in a four-year-old negro girl. The case moved from town and nothing is known of her further progress.

TABLE No. XIV

43	CHRONIC CONDITIONS			2.86%
Endocarditis	3	Arthritis	1
Myocarditis	1	Hypoglycemia	1
Anemia	35	Argyria	2

The one case of myocarditis resulted from diphtheria. The anemia recorded here was of the secondary variety, either as the result of infection or inadequate nutrition. The two cases of argyria moved to our community from other sections of the country and the argyria was present when they were first seen. There was a history of the use of both argyrol and neo-silvol in each case.

TABLE No. XV

92	GENITRO-URINARY DISORDERS			6.13%
Pyelitis	58	Vaginitis, non-specific	4
Nephritis	12	Vaginitis, specific	5
Hydrocele	12	Menorrhagia	1

The incidence of pyelitis seems rather high, yet no case was so diagnosed except in the presence of fever and many pus cells and clumps of pus in the urine. All of these cases were girls.

All except one of the nephritis cases were of the acute hemorrhagic variety, four followed impetigo, the remaining ones were secondary to upper respiratory infections. Two of these cases showed cerebral manifestations which were controlled by intramucular magnesium sulphate.

TABLE No. XVI

117	SURGICAL CONDITIONS			7.80%
Acute appendicitis	5	Fractures	7
Peritonitis	2	Osteomyelitis	3
Intussusception	2	Tonsillectomies	71
Meckel's Diverticulitis	1	Mastoiditis	6
Intestinal Obstruction	2	Antrum Drainage	1
Pyloric Stenosis	5	Inguinal hernia	10
Ruptured Liver	1	Ruptured Spleen	1

The figures given in this table represent operated cases, except the pyloric stenosis in which four of the five cases were operated, and inguinal hernia in which three of the ten were operated.

TABLE No. XVII

66	MISCELLANEOUS		4.40%
Fever, undetermined origin	5	Gangrene, penis, leg, arm	1
Headache	11	Tetany	2
Intestinal Parasites	23	Scurvy	4
Poisoning, chemical	9	Malaria	5
Torticollis	2	Hysteria	1
Pneumococcic Peritonitis	1	Drug addiction	1
Purpura Hemorrhagica	1		

The cases designated as fever of undetermined origin represent a group of children in whom the mothers happened to find an elevation of temperature and then by repeated examinations found this temperature to be present over a long period of time. The fever usually ranged between 99 and 100 F. These children presented negative physical examinations, were in most cases of normal weight, and all laboratory tests were negative. The therapy in these consisted of getting rid of the thermometer.

The one case listed as purpura hemorrhagica was a secondary purpura due to malaria. The case of gangrene of the penis, legs, and arms, was an extremely interesting one and will be reported elsewhere. The condition followed an infection of the mouth and throat with a hemolytic staphylococcus. The one case of drug addiction occurred in an infant six months old and was due to Godfrey's Cordial which contains tincture of opium. The infant was placed in the hospital in order to break the habit but because of continuous crying the parents took it home where the supply of cordial was plentiful.

TABLE No. XVIII

38	DEATHS		2.53%
Prematurity	6	Meningitis	
Congenital Atelectasis	1	Epidemic	1
Congenitatl Syphilis	1	Influenzal	3
Congenital Atresia of Esophaghus	1	Streptococcic	1
Encephalocele	1	Pneumococcic	1
Intracranial Hemorrhage	1	B. Coli	1
Brain Tumor	1	Tuberculous	6
Pneumonia	4	Tetanus	1
Pneumococcic Peritonitis	1	Bacillary Dysentery	1
Septicemia, Streptococcic	1	Diarrhoea with Acidosis	1
Septicemia, Staphylococcic	1	Mastoiditis	1
Septicemia, Pneumococcic	1	Marasmus	1

The high death rate in prematures is partially accounted for by the loss of three at one time as the result of a respiratory infection which invaded our newborn nursery. The prematures are now kept in a premature room which is strictly isolated and we hope that this will not recur.

The one case of mastoiditis was sent to the hospital moribund and died within a few hours of admission. The death from epidemic meningitis occurred in a three-months-old infant. The deaths from bacillary dysentery and diarrhea with acidosis occurred in referred cases within 24 hours of admission to the hospital.

Only one of the children who died had been seen prior to the onset of the disease causing the death. The case with pneumococcic peritonitis had been seen in the public feeding clinic.

The child with staphylococcic septicemia was 12 days old. The focus of infection was an abscessed tooth which was erupted at birth.

TABLE No. XIX

SUMMARY

Newborn and Congenital Defects	92	2.38%
Routine Care	529	13.67%
Immunizations	604	15.61%
Routine Examinations	364	9.41%
Acute Upper Respiratory Infections	656	16.96%
Acute Pulmonary Infections	222	5.74%
Gastro-Intestinal Disorders	236	6.10%
Acute Infectious Diseases	278	7.16%
Accidents	63	1.37%
Allergic Conditions	99	2.56%
Chronic Conditions	43	1.11%
Nutritional and Glandular	41	1.06%
Disorders of the Nervous System	108	2.72%
Cutaneous Lesions	241	6.23%
Genitro-Urinary Disorders	92	2.37%
Surgical Conditions	117	3.02%
Miscellaneous Conditions	66	1.70%

COMMENT

The variety of diagnoses occurring in the first 1500 children seen in private practice has been recorded. The figures indicate that routine care, prophylaxis, and upper respiratory diseases make up the bulk of pediatric practice. It is suggested that more emphasis be given to infections of the upper respiratory tract in pediatric training.

THE INTERPRETATION OF SKIN TESTS IN ALLERGIC CONDITIONS

By Yates Faison, M.D., Charlotte

Bronchial asthma, hay-fever, many cases of eczema, and similar conditions are no longer looked upon as disease entities, but many of these conditions are now considered localized manifestations of a general state of hypersensitivity, atophy, or allergy; being so named as the symptoms of the allergic reaction are localized in the bronchial tubes, nose, or skin. Many, but by no means all, of these local manifestations of hypersensitiveness also show a corresponding reactivity of the skin to the same

substance, as shown by the skin tests. And because of the fact that all the allergic conditions do not show a corresponding skin reactivity, many disappointments are encountered and many lose faith in the skin tests.

Skin tests do not diagnose the state of allergy in an individual; but point out in an allergic individual the specific substance or substances that the individual is sensitive to. It should be emphasized that skin-testing is to be regarded as many other laboratory procedures in other diseases, as an aid in diagnosis, and rarely does it constitute the entire diagnosis; but on the other hand, allergic conditions cannot be competently managed at the present time without the use of such tests. So keep in mind that skin-testing is the initial step in your specific diagnosis, gives you leads for further investigation; and is not the final diagnosis.

Von Pirquiet in 1907, with his technique for cutaneous testing for tuberculosis; and Schick in 1910-1911, with his method for intracutaneous testing for diphtheria, firmly established the principal of skin-testing as an important procedure for diagnosis. Following their work, Schloss in 1912 in testing by the cutaneous method for food hypersensitiveness; Goodale in 1914 in a like manner on pollens; and Cooke and his co-workers in 1912-1916, using the intracutaneous method, standardized skin-testing and established its usefulness in the study and diagnosis of conditions of hypersensitiveness. Great advances have been made during the past twenty years in the knowledge, technique, and use of skin-testing; so much so that it has become increasingly popular and now nearly every physician is somewhat acquainted with it.

Before noting the percentage of proved positive reactions in definite allergic cases, it is essential to know the relative prevalence of positive reactions in presumably normal individuals. Baker has carefully studied this point in children and in 937 cases found only ten positive reactions and eleven doubtful, and concluded that the incidence of positive reactions in presumably healthy children was almost a negligible factor. Peshkin and Rost investigated this same question and in a total number of 502 cases, with 9,406 tests, found only five positive tests in three individual cases, and 67 doubtful positives in 48 cases. Bray performed hundreds of tests in various medical diseases and failed to find a definite positive reaction in any condition other than those with a definite allergic basis.

What then is the reliability of skin tests in these allergic conditions? Without quoting individual opinions, which naturally vary according to the technique and investigator, the following figures may be taken as a general average for the measure of their value. In general, from 50 to 75% of all allergics thoroughly tested are found to be skin sensitive to ingested, inhaled, or contacted allergens, and a large number of these obtain relief by avoiding contact with, or being hyposensitized to the harmful substances. In bronchial asthma, 50 to 75% positive reactions are obtained, most of which can be shown to have clinical significance. Seasonal hay fever cases will show positive tests to the offending pollen or pollens in nearly all cases, 90 to 95%. In perennial hyperesthetic rhinitis

30 to 50% can be diagnosed specifically. In the group showing skin manifestations, as eczema, urticaria and angioneurotic-oedema, it is more difficult to discover the allergen by skin tests; eczema 25 to 40%; urticaria and angio-neurotic-oedema 15 to 25%. In migraine headaches, Vaughan reported a series of 63 cases in which 28 cases were relieved; of these 28 relieved cases, about one-third gave positive immediate reactions; about one-third positive delayed reactions of diagnostic significance, and one-third gave no stronger than borderline reactions throughout, which however, were of diagnostic significance. Usually, the incidence of positive skin reactions runs rather low in this condition. In a number of other conditions, such as mucous colitis, purpura, bladder disturbances, etc., which are at times placed in the class of allergic phenomena, the skin tests are significant in only a small percentage of cases.

It might be added here, a negative skin test does not preclude the condition from having an allergic basis; as many of these conditions, showing only negative skin tests, are later proved to have a definite allergic factor by other tests employed, such as the opthalmic, nasal, contact tests, passive transfer, food diaries and elimination diets, clinical tolerance tests, and leucopenic index.

Skin reactions have their greatest sphere of usefulness in the testing of children and young adults, and in patients sensitive to pollens and other air-borne allergens rather than to foods and bacteria.

Space permits only a few general remarks as to technique. The technique of choice at the present time for those who are doing more than a few scattered or occasional tests is to, first, routinely test with the cutaneous or scratch method, followed by the intracutaneous tests, omitting any substance found positive by the scratch method, to avoid any danger of a general reaction. Powdered extracts or liquid suspensions of extracts are used for the scratch method; liquid extracts of proven strength for the intracutaneous tests. It is better to err in making too many tests than too few. Obviously the extracts must be potent and properly prepared.

The positive skin reaction consists of itching, erythema, or wheal formation, with or without pseudo-pods, either alone or in combination. The true positive reaction is definitely specific to the offending allergen in an allergic individual. The degree or size of the reaction does not signify the importance of the individual allergen to the clinical symptom, except as a rough measure of the sentitiveness to pollens. There is no fixed method of reading or recording reactions, and it is advisable that each investigator should devise his own method which best suits his own technique. There are no general rules, measurements, or comparisons for reading these tests. Each set of tests is an individual problem, as a number of factors vary the degree of activity. There is a marked difference of the skin reactivity in different individuals, as the slight mechanical trauma of the small scratch may produce a confusing reaction in some; as for example, the individual with a dermographic type skin; a negative reaction in such a person may be read as a strong positive in another individual. The re-

activity of the skin to a particular allergen may vary from time to time in the same individual; infants as a rule do not give as large reactions as older individuals; but the old people or those with an atrophic skin are apt to give small or atypical reactions; and different parts of the skin differ in their ability to react. All positive tests are not necessarily true specific reactions, as false or non-specific, traumatic and irritative reactions often occur, due either to some peculiarity in the constitution of the individual or in the testing solution or technique.

These tests must be repeated one or more times to obtain a consistent reading; they may be further corroborated and the true positive differentiated from the false positive by other tests such as the ophthalmic, passive transfer, trial and elimination diets; also the allergen or allergens should be correlated with a history of contact and with a comparative or complete freedom of symptoms on removal.

Any ordinary technician may learn correct mechanical skin-testing in a short time, but the correct interpretation and evaluation of these tests can be learned by an individual only after a definite period of personal instruction, observation and experience, and a correlation of the skin tests with the individual clinical symptoms. A skin test is read as positive or negative, according to the degree of reaction; immediate or delayed, as to time of appearance; true or false, as to significance.

The tests having been performed correctly and the readings recorded, what then is the significance of the positive and the negative reactions?

1. A positive reaction may signify (a) a present, (b) a potential, (c) a past hypersensitiveness, or may be (d) a false positive.

(a) The majority of positive tests undoubtedly indicate sensitiveness of the tissues of the individual to that substance. It may indicate the specific cause of the symptoms of which the patient complains; on the other hand, it may show the cause of a less troublesome or more obscure manifestation. As for example, a case of asthma, with multiple positive reactions, proven definitely to be due to feathers and egg; yet an accompanying reaction to cocoa may not show any connection with the asthmatic symptoms, but accounts for a more obscure allergic headache or colitis. In other words, a positive reaction does not necessarily signify that the reacting substance is the cause of the symptoms complained of by the patient.

(b) Again the patient may show a definite positive to a substance, but may not have sufficient exposure or his tolerance may be too high to allow of any clinical manifestations. In other words, a latent or potential sensitiveness, in which the skin reaction may occur before the clinical manifestation.

(c) Then, it may indicate a past sensitiveness. As for example, a case of eczema in an infant, due to egg, which has definitely healed and shows no clinical evidence but may still give a definite positive skin reaction

to egg. Positive skin reactions may still be given even after successful hyposensitization has been carried out.

(d) Of course, temporary false non-specific and traumatic reactions must be excluded.

2. A negative skin reaction may signify a true absence of sensitivity; this is frequently the case, but by no means, is it true in a number of instances. A patient may give negative reactions but may be demonstrated clinically to have a sensitivity to a particular substance. The extracts used may be unreliable and inactive, because of improper preparation or from age. The potency of the extracts must be checked from time to time on individuals known to be sensitive to the extracts. Most drugs given negative reactions, frequently pollens in young children, quite often foods in infants and adults, and in general bacteria and moulds give doubtful reactions.

If the interpretation of skin testing could be reduced to the point where every positive was a true positive and indicated definitely a specific substance was the specific etiological factor of the clinical symptoms presented, or that every negative reaction proved a true absence of sensitivity, the problem would be much simplified. But, unfortunately such is not the case. Many limitations and difficulties are found in skin-testing. Some of these difficulties are here emphasized.

Skin tests may be positive to substances to which the patient is clinically negative. The fault may be that some irritative substance in the extract produces a false positive, or the skin of a certain individual is so sensitive to trauma that positive reactions will occur with all tests. In the cases where several true positives result, only one or two may be the actual cause of the symptoms; the others may be construed as potential sensitivities and clinical symptoms may never be manifested unless the allergic equilibrium be disturbed by a too strong exposure to the substance or tolerance lowered by some other factor. (A case presenting several symptoms such as asthma, urticaria and headache, may produce a definite food positive—a true sensitization reaction; it would be very difficult to determine whether the food accounted for the asthma or for the other conditions.) A positive skin test may represent a true sensitization but it does not necessarily signify that the substance is the actual cause of the symptoms. Two important facts are to be emphasized: (1) finding a positive skin reaction of itself does not warrant the assumption that the substance so reacting is actually a cause of the clinical symptoms; the clinical test of exposure and avoidance to the substance must be satisfied; (2) these positive reactions may help in a prophylactic manner—they may enable us to warn the individual, with positive reactions but without clinical symptoms, not to eat an excessive amount of a certain food, not to take long walks in the country or fields at certain seasons when pollen sensitization is indicated; not to have nasal operations during certain pollen seasons.

On the other hand, what is the significance of negative skin reactions with positive clinical symptoms? Not infrequently, cases are encountered in which definite allergic symptoms are presented but no positive skin tests are obtainable. Here again, the test extracts must be reliable and potent, otherwise, naturally negative reactions will result. Also, the extracts used for skin-testing may be entirely different chemically from the proteins with which the sensitized organ comes in contact—thus the powdered extract of apple used for making the skin test may not be the same as the digested and circulating apple allergen causing the urticaria. Likewise, you may not obtain a positive reaction in an infant with milk, but on removal of all milk the eczema disappears. Quite frequently, negative skin reactions are obtained but the mucous membranes will give a positive response—this is especially true of pollens in hay fever and inhalants in rhinitis. Cocoa may give a negative skin and yet when ingested produce a mucous colitis. Atrophic skins, as in elderly people, will give atypical or negative reactions. Individuals will show negative phases of skin reactivity, whereas tested later, may show definite positive reactions. Obviously, skin tests would be negative in a case erroneously diagnosed as an allergic condition, when in fact the patient should have cardiac or renal asthma, tuberculosis, foreign body in the bronchi, thymic asthma, or some other such condition. So the diagnosis of an allergic condition must be correct. A mistake often made is the attempt to explain a clinical symptom because of the intensity of the skin reaction. This may or may not be true. Vaughan has shown that just as good therapeutic results were obtained in cases based on borderline skin reactions as in those cases based on strong skin reactions. Strong reactions may be no more significant than weak reactions.

Other factors of a non-specific nature may be of more direct significance than the reactions to the allergens. Other complications such as infection, mechanical difficulties and neuro-genic factors may be of much greater importance. As for example, a bronchial asthma due to feathers may be complicated by bronchial infection. The feathers have been eliminated or the tolerance of the individual increased, yet the bronchial infection may prolong the asthmatic symptoms. It is necessary to study the disease and the patient as a whole and not merely focus one's attention on the skin tests.

Many of these difficulties may be met or overcome by the use of several other tests and procedures, such as the ophthalmic, nasal, contact, and passive transfer or indirect tests; by Vaughan's leucopenic index test; by food diaries and elimination diets; by clinical tests with exposure and avoidance of a suspected substance. Positive skin tests may be corroborated by one or more of these procedures; in the case of negative skin tests, the offending substance or substances may be elicited. As for example, it may be strongly suspected that a patient's hay fever originates from a certain pollen because of the seasonal incidence—all skin tests are negative, yet a small speck of the suspected pollen extract incorporated into

the eye may produce a definite positive reaction; the pollen has reacted on the mucous membrane but not on the skin. Also, where a certain food, among several others, has given a positive skin test; the food is eliminated for a certain period—if the presenting symptom is continuous, the symptom should disappear, thus proving the positive skin test. When the food is returned to the diet, the symptom should return. Where the symptom is occasional, as in allergic headaches, the headache should appear when the food in sufficient amount is returned to the diet. Likewise, a cat-hair or dog-hair asthmatic patient should contract an asthmatic attack if closely exposed to the animals. In the cases which present constant symptoms or multiple positive reactions, all materials represented by the positive tests are eliminated at once to attempt to free the patient from symptoms; then the patient is exposed to one substance at a time. Usually only a limited number of the positive tests are found to have clinical significance. In the instances in which all tests are negative two methods may be used: either, a systematic elimination of one material at a time from the diet or environment; or, the complete elimination of all substances likely to cause the sensitization and then gradually add one substance at a time. Clinical corroboration is the final test.

It should be evident from the foregoing discussion that the mere application of several extracts into skin scratches or by intracutaneous injections does not comprise the entire diagnostic procedure. Many failures and disappointments await such a conception. The severest criticism comes from those who have had little or no experience with it. The effectiveness of the technic in atophic hypersensitiveness depends on the user more than in other types of skin tests. The development of skill in any individual in the use and interpretation of these tests depends chiefly on his training in this field, his experience, and his powers of observation. Proficiency in applying it comes only after extended practice and experience.

SUMMARY

Skin testing in the etiologic diagnosis of allergic diseases has become more and more important and illuminating in recent years in practically every branch of medicine.

The true positive reaction is definitely specific to the offending allergen in an allergic individual.

All allergic conditions do not show a corresponding skin reactivity.

Sensitization tests are to be regarded as a laboratory aid and not the final diagnosis.

A number of factors vary the degree of reactivity of an individual skin.

The tests must be repeated one or more times to obtain a consistent reading.

Skin reactions have their greatest sphere of usefulness in the testing of children and young adults, and in patients sensitive to pollens and other air-borne allergens rather than to foods and bacteria.

Correct interpretation and evaluation of these tests can be learned by an individual only after a period of personal instruction, observation and experience.

The success of an investigator depends on his own power of observation, thoroughness, skill, and "head work."

The significance of positive and negative reactions are discussed. Positive tests do not necessarily indicate the cause of the clinical symptoms; neither do negative skin tests necessarily signify an absense of sensitization to these substances.

There are many difficulties, variations and limitations to these tests.

These difficulties may be met chiefly by the use of other methods of testing, such as the ophthalmic, nasal, contact, passive transfer and leucopenic index test; by food diaries, elimination diets, and clinical trials.

The difficulties and limitations of skin testing are causes for many errors, disappointments, and criticisms.

Complicating factors may be of more importance than the allergy. A skin test based on an erroneous diagnosis is obviously misleading.

It is necessary to study the disease and the patient as a whole and not focus too much attention on the skin tests.

Yet with all their deficiencies, the fact remains that skin tests constitute our most valuable single aid in the specific diagnosis of allergic conditions.

IMPROVEMENTS IN THE DIAGNOSIS OF CHILDHOOD TUBERCULOSIS

By G. W. Kutschen, Jr., M.D., Asheville

INTRODUCTION

The diagnosis of childhood tuberculosis depends upon four recognized standards: history of exposure to the disease, positive tuberculin test, X-ray examination, and recovery of the bacillus. Only the second and third standards are essential in making the diagnosis. Many refinements in these standards have been developed in recent years; a discussion of these improvements is the purpose of this presentation.

What, in general terms, is the outlook for the tuberculous child today? An analysis of a large group of children shows a 28% infection with tuberculosis. "Of these at least 10-20% at some time during their life will suffer or die from clinical tuberculosis" (Meyers 1). In New York City the mortality rate for colored tuberculous children is 152 per 100,000, as compared with but 15 per 100,000 for white tuberculous children, i.e., ten times as great for colored as for white children (Drollet 2).

Today the prognosis in childhood tuberculosis is more encouraging than it was ten years ago; for today some of these tuberculous infants survive (Dunham 3). In every age period of life the death rate is declining except

during the 'teen years (Meyers 4). Our best efforts then must be applied to the phase of early and accurate diagnosis.

"The fight cannot be won by tuberculosis specialists, radiologists, public health officials and social service workers. These all render valuable services; but in the final analysis any successful program will depend largely on the active coöperation of the family doctor" (McCain 5).

EXPOSURE HISTORY

As pediatricians our work is confined to the first 12 to 14 years of the child's life. But in cases of childhood tuberculosis our work cannot stop there. If we are to assist in combatting the white plague, if we are to accomplish anything in the treatment of our patient, we must locate the source of the infection and break up the contact. In this search the household and not the individual suspect becomes the unit. That this is not a simple procedure is manifest by the following analysis. In a series of 361 positive-reactor school children the source of the infection was carefully sought in the home. The focus was found in the homes of 17%; in 8% a vague clue was uncovered; and in the home of 75% of the reactors no evidence could be found. In this study the opinion was offered that the contacts were chiefly fellow students. (Larusen and Halberg 6).

Every member of the household must be held under suspecion, servants (especially negroes), parents, uncles, aunts, grandparents, visitors and siblings. So-called "closed cases" in adults may become temporarily active during an attack of bronchitis or other cough-producing pulmonary irritation. Asking if the suspected person "has a chronic cough" rather than "does he have tuberculosis" will yield more valuable clues. The chronic cough of the elderly is quite often due to fibroid phthisis. (Bruce 7). These people seldom die of tuberculosis; but they do broadcast the organism every time they cough. Grandparents are exceedingly fond of little children and kiss them freely. They resent being examined for tuberculosis, and usually refuse to accept the diagnosis when they are informed of it.

Servants, especially negroes, likewise resent examinations. When discharged as a result of their refusal to be examined, they go to their next employer stating that they are in perfect health. All of this is perhaps of little interest unless it is *your* child that is the victim of careless contact with an open case of tuberculosis.

Conversely, the words of Meyers[1] are most encouraging. "If the tuberculosis activities continue, it is obvious that the time is not far distant when the child who reacts positively to the tuberculin test will be a rarity. Already in some parts of the country approximately 95% of the girls and boys have been infected by the time they reach the 'teen years, it is now possible to say that approximately 90% of such girls and boys have *not* been contaminated by the time they reach this period."

Here in North Carolina we can take a lesson from the veterinarians. For until the splendid work of McCain among the school children of

North Carolina is extended to the pre-school child as well, we cannot compare our vigilance over human tuberculosis to that of the veterinarians over the disease in cattle. Stewart[8] has written, "In certain parts of the United States, certified areas exist in which no cow is in danger of contracting tuberculosis from other members of the herd, and in these certified districts to be a calf is safer than to be a baby, insofar as tuberculosis infection is concerned!" How long will it be until children are as thoroughly tuberculin tested as are the cattle?

THE TESTING

The most outstanding advancement in the study of childhood tuberculosis is the newer method of tuberculin testing. It is now recognized that "the specificity of the allergic reaction is unquestioned (Hill 9—Watts 10). The Von Pirquet (scratch) test has been all but discarded for the more accurate and more sensitive Mantoux (intracutaneous) test. While the latter is more difficult of application, this disadvantage is outweighed by its superior accuracy. Both tests have these two pronounced disadvantages: (1) They are painful on application; and (2) the laity often fear that the test itself may cause the disease. The instability of the Mantoux solution necessitates the careful preparation of fresh solutions. What has been needed is a simple test that will overcome these and other disadvantages, while retaining the high degree of accuracy of the Mantoux test. What is now offered is a skin test which is safe, painless, accurate, and inexpensive. It requires no instruments; and is a procedure that can be used without creating a lengthy discussion with the parents as to the nature of the test.

In 1933 Grozin[11] introduced into this country the tuberculin patch test. He places a drop or two of Koch's old tuberculin on a 3x3 cm. piece of adhesive plaster and applies the whole to the skin of the back for 48 hours. Wolff[12] follows the same technique except that he applies the tuberculin incorporated in an ointment. Waring[13] warns against tampering with the adhesive tape during the 48 hour period. The test is read in degrees of positivity. A positive reaction shows erythema, papules, induration and pigmentation within 10 minutes after the adhesive plaster is removed. Two other tests employ tuberculin ointments, the Moro and the Dermotubin; but these are applied by simple massage. Also they are imported products, and are fairly expensive. The patch test is 95% accurate in comparison with the Mantoux test.

Seibert[14] has recently introduced her P.P.D. (purified protein derivative). This product is a standardized tuberculin and is much more potent than O. T. It is administered intracutaneously, as is the Mantoux test, and is even more accurate. P.P.D. gives more positive responses with less severe reactions than O.T. The following statistics present an idea of the comparative values of the various preparations. In a series of 185 positive reactions tested by each product we find (Greengard and Nichman 15):

T. P. T. (Seibert Precursor of P. P. D.	96 %
Dermotubin	89.7%
Mantoux .1 mg	82.1%
Von Pirquet	64.4%

These figures compare favorably with the reports of others as to the percentage of accuracy.

For institutional work, the Mantoux test or P.P.D. remains the procedure of choice. But for office work the patch test is preferable; it compares most favorably with the others in degree of accuracy.

For all practical purposes tuberculin of human origin serves to detect both human and bovine infection. Occasionally, however, a case is seen which reacts to bovine tuberculin and not to human tuberculin.

Contrary to general belief, Stewart[16] maintains that the intensity of the Mantoux reaction is not a criterion as to the degree of infection or the presence of tuberculous activity. He feels that the reaction merely shows the degree of allergy or the sensitivity of one child's skin to tuberculin as compared with another child's skin. In other words, a 4 plus Mantoux reaction does not necessarily signify activity or extensive infection.

McCain[17] states the problem a little differently when he reports: "In our experience, a considerably larger proportion of the three and 4 plus reactors show demonstrable lesions than of the one and two plus reactors. In 889 reactors we (McCain[18]) found demonstrable X-ray lesions in 37.9% of 3 plus reactors, and in 40% of the 4 plus reactors. While I do not think we are justified in saying the strong reactors have tuberculous lesions, I do think that they are much more likely to have them. We have the impression that children with parenchymal or adult type lesions do not as a general thing react quite as strongly to the tuberculin test as those with primary lesions. We do not have any definite figures to back up this impression however."

X-RAY

Roentgenologists competent to properly interpret films of children's chests are rare. Childhood tuberculosis differs from adult tuberculosis as much as though they were two different diseases. Likewise the interpretation of films of adults with re-infection type tuberculosis and of children with primary infection differs as widely. X-ray alone can rarely make the diagnosis. The post-mortem studies of Miller have shown that the X-ray fails to reveal the exact location in 75% of the cases when the first infection focus is located in the lungs. Meyers and Harrington 1). This gives us some idea of the fallability of the X-ray. As a result of her combined X-ray and gastric analysis studies, Gourley[19] gives us this startling statement, "all parenchymal lung lesions in childhood tuberculosis are open cases."

The dearth of new information from the X-ray standpoint will permit the insertion here of a discussion of some of the non-pulmonary lesions of tuberculosis.

NON PULMONARY LESIONS

The controversy between the pediatrists and the dermatologists over the cause of erythema nodosum still rages. The most convincing recent evidence advanced on the subject points to a tuberculous origin. Accepting the positive tuberculin test as diagnostic of infection with tuberculosis, 96 to 100% of children, with erythema nodosum, girls predominating, have tuberculosis (Dickey[20]). "All children suffering with erythema nodosum or phlyctenular conjunctivitis or pleurisy probably have pulmonary tuberculosis." (Collis[21]).

Wallgren[22] believes he has shown conclusively that erythema nodosum occurs at the time of greatest tuberculous activity in the hilar nodes, directly following their involvement from the primary focus. He found tubercle bacilli also in the gastric contents of 17 out of 40 children suffering with erythema nodosum.

This disease, like tuberculosis, manifests itself mainly in the spring. The interval between exposure to tuberculosis and the establishment of the infection within the body, as demonstrated by the tuberculin test, is from three to seven weeks. (Wallgren[23]). It is at the end of this incubation period that the nodose eruption appears (Laurinsich[24]). This eruption is the primary exanthem of tuberculosis. (Brock[25]). In erythema nodosum we should always consider an active tuberculous process as an accompanying symptom. (Keller[26]). Collis[27] says, "While erythema nodosum may be brought about by more than one allergin, by far the commonest is tuberculous infection, and that it should be our attitude to regard every case as tuberculous until proven otherwise."

It is now a well established fact that phlyctenular conjunctivitis in children is usually of tuberculous origin. In one study 58 of 60 afflicted children gave a positive tuberculin test (Goldstein[28]).

Bone tuberculosis does not create an immunity to pulmonary tuberculosis as was formerly believed. The lungs of patients with bone tuberculosis are now routinely X-ray'd before administering anesthetics.

Blood studies in tuberculous children have given us little that is new. The leucopenia of tuberculosis, as formerly taught, is today denied. The W.B.C.'s are within the limits of the normal (Cocke[29], Reilly[30]). The sedimentation rate for tuberculous children is rapid. It supplies more information in regard to prognosis than it does to activity of the lesion or to diagnosis. It is said to present an advantage over signs, symptoms and all other laboratory procedures in childhood tuberculosis (Reilly[30]).

RECOVERY OF T. B.

As long ago as 1898 Meunier announced his studies on the recovery of the tubercle bacillus from the gastric contents. At that time his report was accepted as a refinement in the diagnosis of tuberculosis; it was thereupon pigeon-holed. No need for such elaborate search for the organism was

recognized until recently. The question, "Are these cases of childhood tuberculosis infectious?" has brought forth an answer based on the studies of Meunier.

While cough is not a prominent symptom of primary lung infection, these children do raise small quantities of sputum. This sputum is promptly swallowed, not expectorated. The possibility of a milk-borne infection and of tuberculous infection above the trachea, e.g., larynx, tonsils, ears, and sinuses, must be kept in mind. The comparative infrequency of these possible foci in children indicts the lungs as the chief source of the tubercle bacilli found in the gastric contents.

Gastric lavage is done preferably in the morning in order to collect the additional organisms swallowed during the night, and to have the advantage of a fasting stomach. Fifty to 200 c.c. of normal saline are given by mouth or by tube, and the stomach contents is then withdrawn, as in any other lavage. Three methods of examination of the recovered fluid are available. (1) The smear examination of the centrifuged precipitate is the most unsatisfactory; and (2) culture of the sediment on proper media reveals only a moderate percentage of accuracy. (3) The most satisfactory and most popular method is guinea pig inoculation (Friedman, et al 31; Mishulow, et al 33; Kereszturi et al 32, Nalbant 34; Poulsen and Anderson 35; Levin 36; Gourley 19). The animal is autopsied in four to eight weeks; and the bacillus must be recovered in order for the test to be considered positive. Culture media have grown the bacillus when it could not be found by autopsy of the inoculated guinea pig (Gourley[19]). Recovery of the organism by gastric lavage varies in frequency from 3 to 50%, according to various workers.

Recovery of the bacillus in the stool is a simpler procedure but yields much less accurate results (Kereszturi et al 32). Repeated stool examinations by one group of workers (Kereszturi, et al 32) gave positive results in almost as many cases as did a single gastric lavage examination. Another authority (Nalbant[34]) states that three stool examinations on the same child will yield a higher percentage of positive results than one or two examinations; but that no better results were obtained by four or five examinations.

In advanced childhood tuberculosis, such as generalized pulmonary or miliary forms, it is not difficult to find the organism. The younger the child, the easier it is to recover the bacillus. (Collis and Brockington 21). Wallgren believes that it is difficult to recover the organism later than the sixth to eighth month after the onset of the primary infection. Summarizing then, it seems that the recovery of the bacillus is a simple matter early in the disease, quite difficult during the next period, and again quite simple during the terminal stage of the disease.

It has been shown that these recovered organisms are virulent. Therefore these children are a menace to healthy children, especially those under four years of age.

Gourley[19] asks the question, "When can the child who has had an open lesion in the lungs be safely transferred from the sanatorium to the preventorium, or to a group of normal children such as those in a public school?" Levin[36] supplies the answer, "A child with a previously positive gastric content should not be discharged until three consecutive gastric analyses, each two months apart, are negative."

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CONTINUOUS INTRAVENOUS DRIP IN THE TREATMENT OF ACUTE INTOXICATION

By J. F. Crumpler, M.D., Wilmington

Parentral fluids become indispensable in cases of acute intoxication where there is an inability to retain fluids by mouth or an excessive loss of water from the body. The mode of administration and the type of fluid to be given depends on the individual case. It is my purpose to give some of the advantages of the continuous intravenous drip.

I believe that Matas was the first in the United States to use the continuous intravenous drip in 1913. His first article for publication appeared in 1924. However it has only been used in pediatrics to any extent during the past four or five years. The drip should be applied more often and in a greater variety of toxic conditions.

Continuous intravenous drip offers many advantages in that a slow, even distribution of fluids is administered which allows better utilization of them. It allows more complete intestinal, mental and physical rest—all of which are very important factors in cases of acute intoxication.

The apparatus is very simple and easily constructed. It consists of an ordinary graduated buret, two pieces of rubber tubing connected by a

Murphy drip bulb and a regulation clamp and an intravenous cannula which may be made from an ordinary intravenous needle. Heating of fluid may be accomplished by hot water bottles around the tube near the needle. At such a slow rate however heating of the fluid is not at all necessary.

The amount of fluid administered varies with the size and age of the patient and the amount of fluid that is being lost by vomiting and through stools. In other words during the first 24 hours of an acute gastro-intestinal upset the fluid intake would be greater than after vomiting and diarrhea had ceased. Roughly from 100 to 150 c.c. per kilogram of body weight per 24 hours is sufficient. This can be accurately calculated and evenly distributed throughout the 24 hour period. An accurate record of the hourly intake should be kept.

SOLUTIONS TO BE USED

By chemical analysis of the blood one can determine what chemical solutions are best suited for the case. The use of one or more solutions is a matter of choice. Ringer's solution supplies chloride and the fixed bases. It may be used in cases of pyloric obstruction, diarrhea, and diabetic acidosis. Hartmann's solution contains the buffered salts and may be used in either cases of acidosis or alkalosis. It may be diluted with distilled water or with 10% glucose. Dextrose solutions either isotonic or hypertonic are indicated in cases of ketosis, starvation, and cases of acute infection where there is a lowered glycogen reserve of the liver and muscles. Five or ten per cent glucose in normal saline is economical, easily prepared and is equally as effective in the majority of cases.

The procedure we follow at the present time is a hypodermoclysis of normal saline and intravenous infusion of 10% glucose is given on admission. Continuous intravenous drip is instituted using Hartmann's solution diluted with 10% glucose or 10% glucose in normal saline.

In cases of acute gastro-enteritis it is very imperative to withhold everything by mouth until the vomiting has ceased and the stools have decreased in number. This period usually varies from 12 to 36 hours. Then small amounts of water are introduced by mouth at frequent intervals and if tolerated well without a marked increase in the number of stools or the production of vomiting either skimmed lactic milk or protein milk is introduced in small amounts at frequent intervals. As the milk and water are tolerated they are increased and the interval between feedings increased until the patient is back on a normal intake by mouth. During this period the amount of fluids from the drip is decreased exactly corresponding with the amount of intake by mouth until it is gradually stopped.

The average length of time that the drip is in use is from two to three days. Sometimes it is necessary to employ it longer. At other times it becomes necessary to reinstitute it after it has been discontinued. I have seen the drip run three days in a premature baby weighing five pounds at the rate of 8 c.c. per hour.

Transfusions of blood are indispensable in the treatment of cases of acute intoxication and may be induced as a direct transfusion or by the citrate method through the cannula, which is in the vein. I believe that transfusions are given too early in a number of these acute cases. It seems to me that it is better to wait until you have a fair amount of certainty that the patient is going to tolerate the fluids you are now administering. I believe it is better to give fluids for at least 12 to 24 hours before the induction of the transfusion in some of these extremely toxic cases.

Drugs such as pneumococcus serum, tetanus antitoxin, and antimenigicoccus serum may be induced through the drip with a slow well diluted distribution and with less danger of producing reactions.

THERAPEUTIC USES

The continuous drip may be used equally effectively in a great variety of conditions. In cases of hemorrhages of whatever cause this supplies much needed fluid in a slow uniform distribution. It may be used in all cases of shock. In cases of acute infection such as influenza or some pneumonias where there is vomiting and distension and the fluid intake by mouth is inadequate; in surgical conditions such as intestinal obstructions and in post-operative conditions such as paralytic ileus or other conditions where fluids by mouth cannot be tolerated; in cases of poisoning where gastrointestinal rest is indicated, continuous intravenous drip in many cases has proved to be a life saver. It has also been very effective in cases of starvation, marasmus, and cyclic vomiting.

COMPLICATIONS ENCOUNTERED

Complications do arise some of which are directly due to the use of the intravenous drip. Locally there will always develop edema of the extremity used. This is without consequence until the extremity becomes very tight and brawny at which time the drip should be immediately stopped. If hot applications are applied to the extremity the result is that the edema rapidly disappears. Phlebitis of the vein does occur to a certain extent in all cases. This is of no consequence until red streaks appear proxymal to the insertion of the needle or localized areas of induration appear. In such cases again the drip should be discontinued and hot applications applied. I have never seen a case of phlebitis that did not clear up with local applications and without further complications.

Unexplained rather sudden generalized edema with rapid termination does occur. I have seen two such cases in which the drip had been in operation for two or three days with apparently marked improvement in the patient's condition and within a period of from four to six hours generalized edema occurred and subsequently death. Both of these cases occurred during the night when the nurse on the ward was apparently not keen enough to detect what was happening. Generalized edema if detected early enough can usually be overcome by discontinuing the drip and giving hypertonic glucose.

CONCLUSIONS

1. Continuous intravenous drip offers the best method for the introduction of fluid where repeated infusions are indicated, allowing an even distribution at a much slower rate and maximum amount of intestinal, physical, and mental rest. Blood and drugs can be introduced by this method with a minimum amount of disturbance and possibly with less danger of reaction.

2. It should be used in a greater variety of surgical and medical conditions and more often.

3. It requires the supervision of a competent nurse to reduce the complications which do occur.

WOMAN'S AUXILIARY
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MINUTES OF THE MEETING OF THE BOARD OF MANAGERS OF THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Tuesday, August 1, 1934, Wrightsville Sound

The Board of Managers of the Woman's Auxiliary to the Medical Society of the State of North Carolina met Tuesday morning, August 1, 1934, at eleven o'clock, at the home of the president, Mrs. J. B. Sidbury, on Wrightsville Sound. The following members were present: Mrs. J. Buren Sidbury, Mrs. P. P. McCain, Mrs. J. W. Huston, Mrs. W. T. Rainey, Mrs. R. A. Schoonover, Mrs. A. H. Elliot, Mrs. E. C. Judd, Mrs. J. C. Wessell, Mrs. C. T. Wilkerson, Mrs. R. D. McMillan, and Mrs. M. H. Rourk, president of the New Hanover-Pender Auxiliary.

The following matters were discussed:

1. Chairman for the Exhibit Committee. Mrs. Judd and Mrs. Wilkerson suggested that Mrs. Sidney Smith, of Raleigh, be asked to serve as chairman. Mrs. Wilkerson offered to help her and it was suggested that she get in touch with Mrs. M. L. Stevens, of Asheville, who represents our Auxiliary on the A. M. A. Auxiliary Board, and ask her just what was wanted. Mrs. Smith was to be empowered to appoint her own committee.

2. Mrs. P. P. McCain, of Sanatorium, was asked to serve as publicity chairman for the year.

3. Red tape and the interest rate on the loan. Mrs. Schoonover and Mrs. Judd were asked to work out a simplified form to submit to the Fall Board meeting.

4. Ways and Means for obtaining subscriptions to *Hygeia*. It was decided to ask for suggestions in the call to the Fall Board meeting.

5. Work of the Public Relations Committee. Mrs. McMillan asked for suggestions from the members.

6. Name and Endowment for the Bed. It was decided to ask for an expression of opinion from all Board members through the call to the Fall Board meeting.

7. Councillors and District meetings. Councillors were asked to call their district meetings as early as possible in the fall and to send an account of them to the Publicity Chairman and to the President.

8. Any one having suggestions for the Research Committee was asked to write to Mrs. Foy Roberson, and any one knowing of the death of any doctor's wife was asked to write Mrs. I. H. Manning.

Officers present reported informally. The Corresponding Secretary wrote a letter to Mrs. T. L. Carter who was ill in a hospital in Norfolk, Va., expressing our regret over her illness and consequent absence. This was signed by those present.

Upon motion, the meeting was adjourned and lunch was served to the Board members and to the members of the local auxiliary.

Respectfully submitted,

Mrs. A. H. Elliot,
Acting Secretary.

MINUTES OF THE MEETING OF THE BOARD OF MANAGERS OF THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Thursday, October 18, 1934, Sanatorium, N. C.

The fall meeting of the Board of Managers of the Woman's Auxiliary to the Medical Society of the State of North Carolina was called to order by the president at half past ten on Thursday morning, October 18, 1934, in the Nurses' Home at Sanatorium, N. C. The following members were present: Mrs. J. Buren Sidbury, Mrs. P. P. McCain, Mrs. C. P. Eldridge, Mrs. W. T. Rainey, Mrs. E. C. Judd, Mrs. J. C. Wessell, Mrs. A. B. Holmes, Mrs. W. P. Knight, Mrs. R. D. McMillan, Mrs. Fred R. Taylor, Mrs. I. H. Manning, Mrs. Sidney Smith, and the following presidents of local auxiliaries: Mrs. H. L. Griffin, Montgomery County, Mrs. W. C. Mudgett, Moore County, Mrs. R. A. Matheson, Jr., Hoke County, Mrs. E. T. Harrison, Guilford County, and Mrs. R. B. Hare, New Hanover-Pender Counties.

The treasurer, Mrs. E. C. Judd, reported:

Balance on hand May 5		$136.54
Receipts		132.10
Total Receipts		$268.64
Disbursements		158.73
Balance on hand October 18, 1934		$115.91
Loan Fund—		
Balance in Saving Dept.	$713.77	
Note for loan	100.00	
Total amt. Loan Fund	$813.77	

Mrs. Judd called attention to the fact that all Sanatorium bills are paid every two months and that out of this balance we owed for September and October on the bed, and that we also owed part of this amount for dues to the A. M. A. Auxiliary. The treasurer also called the attention of the members to the fact that her books are closed on March 30th and that no names appear on the membership roster for the current year unless the dues have been paid prior to that date.

The chairman of Public Relations, Mrs. R. D. McMillan, reported that she was working on her task and was trying to contact others who might have suggestions to offer.

The chairman for Hygeia, Mrs. Fred R. Taylor, reported that she had contacted two of the district meetings in an effort to get doctors to subscribe through the Auxiliary. She asked that the members of the Board and particularly the Councillors help with this work. She explained that the doctors could get *Hygeia* through the Auxiliary at the same price that they get it through the A. M. A. and that $1.25 out of each $2.50 subscription or renewal remained in our treasury.

The president read a letter from Mrs. J. W. Huston, first vice-president and chairman of organization, saying that owing to illness she would not be able to take an active part in the work and asking that some one be appointed in her place. The president stated that this office was not an elective one, but one that was automatically filled by the outgoing president, and that Mrs. Huston's knowledge of the work and enthusiasm for it were invaluable. She recommended that the resignation not be accepted and that all Board members pledge themselves to carry on the organization work for Mrs. Huston. Motion to this effect was made and carried and the corresponding secretary notified to write Mrs. Huston to this effect.

Mrs. W. P. Knight reported that she and Mrs. C. W. Banner had gone over to Statesville at Mrs. J. R. Terry's request to help organize the Ninth District. She reported an enthusiastic meeting. Mrs. Knight offered her services to help with Mrs. Huston's work whenever she could respond.

The subject of joining the Southern Medical Auxiliary was discussed. It was decided to join on a district basis, paying $1.00 per year for each district organized. The treasurer was instructed to send a check to Mrs. Oliver W. Hill for $10.00.

The question of a name and an endowment fund for the bed at Sanatorium was discussed fully. A letter from Mrs. McGeachy was read suggesting that the bed be named the McCain Bed in honor of both Dr. and Mrs. P. P. McCain and that an endowment fund be started. The president stated that this was the only letter she had received from any member who was unable to attend giving any views on this subject. The Board voted to adopt the name McCain Bed and to start slowly building an endowment fund. The president tried to make it plain that there would be no special drive to obtain funds for the endowment. As a beginning she stated that she would give her expense fund for the year as the first donation. Mrs. E. C. Judd contributed $10.00 and Mrs. J. C. Wessell gave $1.00. Mrs. W. P. Knight contributed her expense account for the trip to Statesville.

In the absence of Mrs. Schoonover, who was ill, Mrs. Judd reported that no one had applied for a loan this year. She suggested that the fund be controlled by by-laws so that each chairman could have something definite and permanent to hand on to her successor. It was the consensus of opinion that a 6% interest rate was rather high and that the interest

should not be charged until the borrower had finished school. These suggestions were referred to Mrs. Schoonover's committee on revision with the request that they report at the Spring Board meeting.

The Nominating Committee was elected as follows: Mrs. J. R. Terry, Mrs. J. C. Wessell, Mrs. E. L. Strickland, Mrs. W. A. Brewton. The president announced that she would name a chairman later.

It was decided to invite the presidents of the American Medical and the Southern Medical Auxiliaries to be our guests at the annual meeting.

Mrs. Mudgett was asked to ask Mrs. Dickey, who will be chairman of entertainment, to investigate a place for the business meeting outside the hotel if possible. It was suggested that it might be possible to get the Carolina Theatre.

Mrs. Sidney Smith, of Raleigh, was introduced as the chairman of exhibits.

It was announced that Mrs. I. H. Manning will have charge of a short memorial service for the deceased wives of doctors at the annual meeting.

Upon motion the meeting was adjourned and the members were invited to lunch through the courtesy of the Sanatorium officials.

Respectfully submitted,

Mrs. R. D. McMillan,
Acting Secretary.

Monday, May 6

2:00 p. m.—Drive to Sanatorium via Aberdeen and Southern Pines. Tea at Montesanti's Spaghetti Camp.

7:15 p. m.—Executive Board Meeting (Room No. 22).

8:00 p. m.—Shirley Temple in "Our Little Girl" at Carolina Theatre, courtesy of Charles Picquet, Manager.

Tuesday, May 7

9:30 a. m.—Opening Session, State Medical Society.
President's Address, Dr. P. P. McCain, Sanatorium.
Presentation of President's Jewel by the President-elect, Dr. Paul H. Ringer, Asheville.

10:30 a. m.—Executive Board Meeting (Men's Card Room).

11:00 a. m.—Annual Meeting (Men's Card Room).

2:30 p. m.—Jugtown Pottery Exhibit (Mr. Jacques Busbee) Jugtown favors.
Music Southern Pines High School Glee Club. Pinehurst Country Club.

6:30 p. m.—Dinner Meeting—Main Dining Room.

9:30 p. m.—President's Reception and Thirteenth Annual Medical Society Ball.

Wednesday, May 8

9:30 a. m.—Executive Board Meeting (Room No. 22).

10:00 a. m.—Drive—Orchid Gardens.

Information for Ladies

1. Register on arrival and receive badge. $1.00 registration fee for all who have not paid 1934-1935 dues.

2. Wear badge to all functions.

3. No extra charge for dinner meeting for those stopping at The Carolina. $1.50 for others.

4. Ladies are asked to use their own cars where possible.

LADIES' ENTERTAINMENT COMMITTEE

Mrs. John Symington, *Chairman*.....Carthage
Mrs. A McN. Blair.....Southern Pines
Mrs. J. S. Milliken.....Southern Pines
Mrs. E. L. Prizer.....Southern Pines
Mrs. E. M. Poate.....Southern Pines
Mrs. P. J. Chester.....Aberdeen
Mrs. J. W. Dickie.....Southern Pines
Mrs. R. G. Rosser.....Vass
Mrs. A. McN. Blue.....Carthage
Mrs. W. C. Mudgett.....Southern Pines
Mrs. Chas. T. Grier.....Carthage
Mrs. H. W. Bowman.....Aberdeen
Mrs. M. W. Marr.....Pinehurst
Mrs. P. P. McCain.....Sanatorium
Mrs. S. M. Bittinger.....Sanatorium
Mrs. J. S. Williams.....Sanatorium
Mrs. Alban Papineau.....Sanatorium
Mrs. W. F. Thornton.....Sanatorium
Mrs. Allison Ormond.....Sanatorium

Tuesday, May 7, 11:00 a. m., Men's Card Room

PROGRAM

Mrs. J. Buren Sidbury, *President*, Presiding

Call to Order—Mrs. J. Buren Sidbury, President
Lord's Prayer
Greeting—Mrs. John Symington, Carthage
Response—Mrs. E. Bruce Beasley, Fountain

Memorial Service

Mrs. I. H. Manning, Chapel Hill

During the year just passed God in His infinite wisdom has seen fit to remove from our midst

Mrs. Hood of Gastonia
Mrs. Monroe of Sanford, July 29, 1934

Mrs. Eward Herring, Raleigh, October 16, 1934
Mrs. Parron Jarboe, Greensboro, October, 1934
Mrs. C. E. Cheek, Fuquay Springs
Mrs. R. H. Winchester, Charlotte, February 26, 1934

In selecting verses from the Bible to use in this memorial service, I have selected passages bearing hope of eternal life.

"Come ye blessed children of my father, receive the kingdom prepared for you from the beginning of the world."

"I am the resurrection and the life, saith the Lord; he that believeth in me, tho' he were dead, yet shall be live; and whomsoever liveth and believeth in me, shall never die." St. John xi, 25-26.

"I know that my Redeemer liveth. I heard a voice from Heaven say henceforth blessed are the dead who died in the Lord—for they rest from their labour." Rev. xiv, 13.

Now the laborer's task is o'er
Now the battle day is past
Now upon the farther shore
Lands the voyager at last
Father in Thy gracious keeping
Leave we now Thy servants sleeping.

There the tears of earth are dried;
There the hidden things are clear;
There the work of life is tried
By a juster Judge than here,
Father, in Thy gracious keeping.
Leave we now Thy servants sleeping.

Let us pray.

O, Lord Jesus Christ, who by Thy death didst take away the sting of death; grant unto us they servants so to follow in faith where thou hadst led the way, that we may fall asleep peacefully in thee, and wake in thy likeness, through thy mercy, who livest with the Father and Holy Ghost, one God, world without end, Amen.

Our Father who art in Heaven,
Hallowed by Thy name, Thy Kingdom come,
Thy will be done on earth. as it is in Heaven.
Give us this day our daily bread,
And forgive us our trespasses, as we forgive
those who trespass against us, and
lead us not into temptation; but
deliver us from evil. Amen.

Business Session

Minutes—Mrs. K. B. Pace, Greenville.

Executive Board Meeting—May 7, 1935

The Executive Board of the Auxiliary to the Medical Society held a meeting Tuesday, May 7, in the Men's Card Room at The Carolina. The following resolutions were voted on to be recommended to the general meeting for adoption:

1. The Bed at Sanatorium which is financed by the Woman's Auxiliary be named the McCain Bed in honor of both Dr. and Mrs. P. P. McCain.

2. That an endowment fund be started for this bed.

3. That the county auxiliaries join the State Auxiliary on district basis rather than a county basis.

4. That the State Auxiliary join the Southern Medical Auxiliary on a district basis.

5. At the suggestion of Southern Medical Auxiliary a day be set aside called Doctor's Day—this day to be March 30—first date anesthesia was given to the world. Object of this day to be the well-being of doctors both living and dead.

6. The fiscal year to be closed twenty days after our State Convention.

7. That an appropriate marker be placed for the bed at Sanatorium—a committee to be appointed for this.

8. The Auxiliary to endorse the movement of birth control.

As there was no further business, the Board adjourned to meet with the general meeting of the Auxiliary.

LIDA TAYLOR PACE, *Secretary.*

TREASURER'S REPORT

MRS. E. C. JUDD, Raleigh

Receipts and Disbursements, May 1, 1934, to May 20, 1935

Balance on Deposit May 1, 1934		$ 136.54
RECEIPTS		
Dues 349 members (1934-1935)	$349.00	
Dues 10 members (1935-1936)	10.00	
	$359.00	
Less one-half applied to McCain Bed Fund	179.50	
		$ 179.50
Contribution to Marker—Cumberland County		6.34

McCAIN BED FUNDS

CONTRIBUTIONS TO McCAIN BED FUND (UP KEEP):

One-half membership dues according to ruling of by-laws	179.50	
New Hanover County	80.00	
Wake County	66.00	
Guilford County	13.00	
Hoke County	10.00	
Alamance-Caswell Counties	7.00	
Roberson County	4.00	
Hygiea Commissions	11.75	
Contribution from friends	15.00	
		$ 386.25

DONATIONS TO THE McCAIN ENDOWMENT FUND

Mrs. J. Buren Sidbury, Wilmington	$ 29.50		
Mrs. E. Clarence Judd, Raleigh	10.00		
Mrs. J. B. Person, Selma	5.00		
Mrs. W. P. Knight, Greensboro	2.00		
Mrs. J. C. Wessell, Wilmington	1.00		
Mrs. R. S. McGeachey, Weldon	1.00		
Contributions from friends	3.00		
		$ 51.58	
Total Receipts			$ 623.67
Total			$ 760.21

DISBURSEMENTS

Dues to American Medical Auxiliary (1932-1933)	$ 64.75	
Dues to American Medical Auxiliary (1934-1935)	87.25	
Dues to Southern Medical Auxiliary (1934-1935)	10.00	
Stationery—Dr. A. D. Ownbey, Greensboro (1933-1934 account)	11.15	
National Presidents Lunch (1933-1934 convention)	2.00	
North Carolina Sanatorium Bed (May 1, 1934-May 1, 1935)	182.50	
Stationery—Wilmington Printing Company	13.25	
Membership cards—Edwards & Broughton Company	7.25	
Material for Poster	7.00	
Postage, telephone and telegraph (president)	17.58	
Postage, telephone and telegraph (treasurer)	12.03	
Automobile expense (Mrs. W. P. Knight)	2.00	
Federal Check tax	.12	
Total Disbursements		$ 416.88
Balance on Deposit May 20, 1935		$ 343.33

STUDENT LOAN FUND

Balance on deposit (savings) May 1, 1934		$ 704.94
Donation—Guilford County Auxiliary	$ 24.90	
Interest—April 21, 1934 to April 9, 1935	15.99	
		40.89
Total amount (Wachovia Bank, Raleigh)		$ 745.83
OUTSTANDING NOTE:		
October 20, 1933—Made a loan to Miss Genevieve Whittington, Snow Hill, N. C.	100.00	
Tax on check	.02	
		100.02
Total		$ 845.85
Total amount in treasury		$1,189.18

TRANSFERRED TO MRS. F. R. TAYLOR, INCOMING TREASURER

General Fund (including $6.34 for Marker)	$ 88.00
McCain Bed Fund (up keep)	203.75
McCain Endowment Fund (savings)	51.58
STUDENT LOAN FUND:	
Cash on deposit (savings)	745.83
Note covering loan	100.02
	$1,189.18

REPORT OF CORRESPONDING SECRETARY

Your Corresponding Secretary served as Recording Secretary at the summer Board meeting held at the president's home on Wrightsville Sound, has written all letters requested, has had mimeographed notices of all Board meetings, reports of the Board meetings and the call to the State Convention.

Respectfully submitted,

MRS. A. H. ELLIOT,
Corresponding Secretary.

EIGHTH DISTRICT COUNCILLOR

The Eighth District is composed of ten counties. Guilford County is the only county organized. Guilford has 45 members, two more than last year.

Rockingham County through the efforts of Mrs. John Ray of Leaksville and Mrs. McGeehee of Reidsville sent in eleven members to our State Auxiliary and Randolph County sent in one new member making a total of fourteen new members from the Eighth District.

The report sent me by the president of the Guilford County Auxiliary is as follows:

The Woman's Auxiliary to the Guilford County Medical Society held its first meeting in June as a "picnic" supper in the home of Mrs. W. P. Knight, Greensboro. At this meeting reports from our State meeting were heard, and plans for the year's work were made. The Auxiliary voted to send the magazine *Radio News* to Dr. Johnson, our patient in the Auxiliary bed at the State Sanatorium.

The September meeting was held in the Sheraton Hotel in High Point. An interesting program was given on Madame Curie.

At the December meeting the members brought Christmas gifts for Dr. Johnson. This meeting was held in the lovely home of Mrs. W. L. Jackson in High Point, the High Point ladies acting as associate hostesses.

For our final meeting in March the Auxiliary was entertained at a lovely buffet dinner by Mrs. C. W. Banner in Greensboro. At this meeting reports of the year's work were read, and new officers elected. The Auxiliary voted to give a pantry shower to a docotr and his wife who are old

and in need. Some lovely things were sent them, including a check for $5.00.

At our meetings during the year free will offerings were made to the Auxiliary bed and to the Student Loan Fund.

Amount received for S. L. F.	$ 24.80
Amount received for Auxiliary bed	13.00
Amount received for membership	42.00
Total	$ 79.80

The Auxiliary secured three new subscriptions to *Hygeia*. The attendance at the four meetings averaged about thirty.

As Councillor, I've written letters to some one in each county urging her to call their doctors' wives together and organize an auxiliary.

I attended the two district meetings held in our district. One in the fall and one this spring. Both meetings were well attended and much interest shown.

I've followed those meetings up with letters to the different counties represented urging them to follow up the interest shown in their county.

I attended three board meetings during the year.

Respectfully submitted,
Mrs. W. P. Knight, *Councillor.*

REPORT OF LOAN FUND

Total in bank, $770.73. There was no request for a loan from this fund during the past year. The committee has been studying by-laws and constitutions of other organizations and will have a recommendation to present at the next annual meeting.

Respectfully submitted,
Mrs. R. A. Schoonover,
Chairman of Loan Fund.

REPORT OF MEETING OF WOMAN'S AUXILIARY TO AMERICAN MEDICAL ASSOCIATION

The Woman's Auxiliary to the A. M. A. met in Cleveland, Ohio, June 1934. It had been 52 years since the A. M. A. had met in Cleveland, so I think our hostesses were determined to have each guest have a pleasant memory of their city. We were impressed with their kind hospitality from the first day of our arrival. Everything possible was planned for our comfort.

Mrs. Blake, whom many of you remember so pleasantly, presided at the business sessions. Her report showed that she had spent a very busy year and had accomplished much to promote interest and enthusiasm for the work of the Auxiliary. You will be pleased to know that in her President's Address she referred to Dr. Manning's talk which he gave to

our Auxiliary last year, and quoted him as saying, "Women of the Auxiliary, we need you." I felt proud.

The meeting was well attended, there being 863 registered with the Auxiliary, and 563 doctors' wives registered by their husbands as guests of the convention. The reports of the State Presidents were interesting and full of enthusiasm. I am sure you will regret to hear that the splendid report sent in by our State President was not read on the floor of the convention because there was no delegate present to read it. It did, of course, appear in the minutes. If we could have active representation at the national meetings, I am sure it would result in added enthusiasm and progress in the work of our State Auxiliary.

I should like to give you a detailed report of the meetings, but that would consume too much time. However, I will mention just one outstanding action which I think is of interest. In years past there had been no expense fund provided for the incoming president as all funds were apportioned and used before the annual meeting. This left no funds available until dues were sent in from the states. It had long been the desire of Mrs. Freeman that a fund should be provided for this purpose. When Mrs. Freeman died friends and leaders of the Pennsylvania Auxiliary established a memorial fund from the surplus money for contributions for flowers at the time of her funeral, the amount being $230.00. It was recommended that a substantial sum be added to this fund each year until this amount should grow to be sufficient for the president's needs. The amount used by the president must be returned to the fund each year. The fund to be known as the Corinne Keen Freeman Revolving Fund.

This suggests to me the desirability of some provision in our State Auxiliary whereby our president would be provided with funds sufficient to cover traveling expenses in visiting district and county auxiliaries.

The social affairs planned for our entertainment were very pleasant indeed. Among other delightful affairs was a Southern breakfast. The hostesses being Mrs. Southgate Leigh, president of Southern Medical Auxiliary, Mrs. James Blake, president National Auxiliary, and Mrs. Robt. Tomlinson, president-elect of National Auxiliary. A large number were present, and this proved a most informal and enjoyable time for every one.

Mrs. M. L. Stevens,
Director, Woman's Auxiliary to the A. M. A.

REPORTS OF STANDING COMMITTEES

Committee on Public Relations

Your chairman has assisted at one pre-school clinic, made talks before three lay organization. Written a total of 46 letters.

Held several interviews with the field agent of The American Birth Control League. In November 1934 they had established 148 centers. They claim that in the past birth control has been in the hands of the men, this

method places it in the hands of the women. Birth rate was 50% higher among families on relief during the past two years than among families able to care for themselves. What does this mean to our country? This subject will be discussed and acted upon at the General Federation of Women's Clubs at the Triennial Convention to be held in Detroit, June 4-12 along with other such controversial subjects as universal finger printing, lynching, the foreign policy of the United States and present economic and political trends.

A report for the Educational Department in regard to the future curriculum for our public schools is being prepared to be presented at a meeting in Raleigh in the near future.

Many of us, no doubt, when invited to become a member of the Auxiliary, paid the dues required without considering the obligation incurred.

We wonder if any imagined they were being called on to help in the actual practice of medicine?

You know our purpose is to extend the aims of the medical profession through the wives of the doctors, to the various women's organizations which look to advancement in health and education; to assist in entertainment at state, district and county society meetings and to promise a better understanding of the relationship of the physician to the community.

Now part of that "to extend the aims of the medical profession" has been intangible; it is like medical ethics—we don't understand it very well. But every one of you who has helped with a pre-school clinic or served on a committee of some other organization, has helped to do her part.

Our husbands are members of the Medical Society of the State of North Carolina. They are banded together for scientific research of the cause, prevention and cure of disease. We may go far under their direction, in aiding in the disease prevention program.

Your chairman began her year's work so ignorant of her duties and has learned so much of interest she feels she has received more than she has given.

Respectfully submitted,
(Mrs. R. D.) Gertrude McMillan.

Repoprt of Hygeia Chairman for the Women's Auxiliary to the Medical Society of the State of North Carolina

Your chairman has written 23 state, and three national, letters in the interest of *Hygeia*.

She has made three talks to parents in two nursery schools on The Nervous Child, one talk on Sex Education to the same group, talked to two mothers' study groups on the same subjects.

She has spoken to the doctors of the Eighth District Medical Society, urging them to subscribe for *Hygeia* through our Auxiliary, with the pitable result of ten subscriptions for the entire State!

Our quota for the year was set at 116 subscriptions by our national chairman, Mrs. James D. Lester.

Guilford County made her quota with our new Ninth District Auxiliary taking the lead in the number of subscriptions sent in.

Respectfully submitted,
Mrs. F. R. Taylor, *Chairman.*

Report of Publicity Committee

As Chairman of Publicity, I would like to say that I have attended three Board meetings this year, have sent in news items to *Southern Medicine and Surgery* four times, and have sent one report to the Chairman of Publicity of the American Medical Association.

I wish to express appreciation to Mrs. Knight, Councillor of the Eighth District, for the reports from her county and district.

May I urge each district and county officer to send in news items to your next chairman of publicity, for, unless you send her notices, she can not send articles to *Southern Medicine and Surgery* and to the Auxiliary to the American Medical Association.

Mrs. P. P. McCain,
Chairman of Publicity.

PRESIDENT'S REPORT

Mrs. J. Buren Sidbury, Wilmington

As president of the Women's Auxiliary to the Medical Society of the State of North Carolina it is my privilege to try to present a summary of the work done during 1934-35. This has already been presented in detail to you by your Councillors, State Officers and Chairmen, and you realize fully how much of the success of the year is due to their inspiring and able leadership and their unvarying loyalty to our organization. It has been a pleasure to work with them and to learn to know them and I wish to take this occasion to express my deep appreciation for their loyal and harmonious support. In this day of unanswered letters, it is a pleasure to be able to report that practically every letter sent out from the president's office was answered and that nearly every person who was asked to accept part of the responsibility and work of the Auxiliary accepted graciously. My memories of my year of service are all pleasant ones.

You have listened to the report of the Chairman of Organization. For the first time every district has a nucleus for an organization and for the first time every district has a councillor. The reports sent by the ten councillors to the Chairman of Organization are most encouraging. The prospects for a more complete membership for next year are most inspiring.

In your president's opinion, the councillors are the most important link in our organization. Our progress may be measured by the enthusiasm and intelligent interest which they bring to their work. Our splendid growth this year is largely due to them.

Since the beginning of our Loan Fund there has been only one call on it. While we are sorry not to have it used, we are glad that no doctor's child has needed it. It is growing slowly, but steadily and we hope ultimately to have a fund large enough to use before the last two years of college.

Our fund for the bed is in good shape. During the past year the bed has been used by a young doctor whose health broke down soon after he started to practice. We are happy to know that he has improved and that soon he will no longer need our aid. We have been informed that a daughter of a doctor has applied for it and we will be happy to have her as our guest till she recovers her health.

Our treasury is in splendid condition. The treasurer's report must necessarily be incomplete today since she has had no opportunity to check up on those who have paid their dues since coming to convention, but even so it shows that all bills are paid and a very respectable sum left in the treasury. We are justly proud of this report.

During the year we have attended two Board meetings—one held last August at the president's home on Wrightsville Sound and the other in October at the organizing president's home at Sanatorium. Both were well attended.

From these two Board meetings come the following recommendations:

1. That a set of by-laws be drawn to safeguard the operation of the Loan Fund and that the rate of interest be reduced and no interest charged till the borrower has finished college.

2. That the bed be named the McCain Bed in honor of Dr. P. P. McCain and his wife, Sadie McBrayer McCain, who was our organizing and first president. That an endowment fund be started for the bed and a marker be placed on the front of the administration building at Sanatorium.

There are a few other suggestions which your president would like to make. First, it seems more practical to have your treasurer close her books at a stated time after the Convention when all dues are in and all bills paid for the year rather than have them closed a month or six weeks in advance. Our State Convention has no set date for meeting. In the past few years we have met in April, May and June. To close the books the 30th of March may mean that we would be practically without a treasurer for two months.

Second, many of our counties have no large towns in them. Doctors are located quite a distance apart. It is almost impossible to organize county auxiliaries. I would suggest that we organize on a district basis—that the State organization look to the Councillors for information and

reports—that they be our liasson officer so to speak, between all members and the State organization. And may I reiterate, that in my opinion these Councillors are and should be the strongest link in our organization? In making this suggestion that we use a district basis for our State organization, I do not wish it to be understood that I wish to obliterate all county and city auxiliaries. The Councillor will need them for units of organization in her work. This is especially true in those more populous towns and counties.

Last year our national president, Mrs. Blake, urged us to take offices in all organizations connected in any way with health activities. It is one way in which we may serve our husbands' interests. Who can interpret the ideals, ideas and ethics of the medical profession to a lay organization better than we can? Or rather, better than we can if we take the trouble to inform ourselves. Socialism in medicine is being widely discussed. Wouldn't it be worthwhile for us to inform ourselves on this subject and be able to present the view of the doctors when the subject is discussed? The National Congress of Parents and Teachers is trying hard to distinguish between a clinic and a summer round-up campaign. Judging from newspaper publicity most of us think of them as synonymous terms. Why not inform yourself and serve on the summer round-up campaigns in your local parent-teacher associations? Birth control clinics are coming. Learn about them—their good points and their bad—and serve on these committees if you are asked.

Hygeia is so closely connected in my mind with the paragraph just preceding that I scarcely know whether it should be placed in a new paragraph. The American Medical Association is editing this magazine for laymen. Medical subjects are discussed in a scientific, ethical manner in words that anyone can understand. By placing this magazine in school and public libraries, in the offices of doctors and dentists we can do much to aid our husbands in getting their views before the public. Besides doing this every subscription sent in through our State Chairman pays for one day and a half in our bed at Sanatorium. Ask your husband for his subscription. We can give it to him at the same rate that he pays when he gets it with his A. M. A. Journal. It is a little more trouble to subscribe separately, but he will be willing if you make him see how much it means to your auxiliary. This is one way in which every member can have a share in our work.

In closing I wish again to thank every one of you for your coöperation and loyalty during the past year and to express my appreciation for the help and advice given by the Advisory Committee whenever I have called on them.

Respectfully submitted,

Mrs. J. Buren Sidbury,
President Woman's Auxiliary to the Medical Society of the State of North Carolina.

GREETINGS TO THE WOMAN'S AUXILIARY FROM THE MEDICAL SOCIETY

By Dr. P. P. McCain, President

Madam President and members of the Woman's Auxiliary to the Medical Society of the State of North Carolina: The privilege of bringing to you the greetings of our Society is one of the most welcome which has fallen to my lot as president. Were I not so deeply interested personally in your organization I could well feel jealous, for ever since its beginning I have had to be satisfied with second place in the affections of my wife.

I wish to express to you personally as well as officially my deep appreciation of your taking as one of your activities the provision of a bed at the North Carolina Sanatorium for the use of physicians and their families. Having become a tuberculosis victim myself only one month after having struggled financially through medical school, I can appreciate as few can what such an opportunity means. Every day as I see renewed health, hope and happiness return to the young physician who now occupies your bed, I am reminded of our indebtedness to you. For your kind consideration in designating this the McCain Bed for Mrs. McCain and me, we feel greatly honored and we have not words to express to you how much we appreciate your kindness.

The growth of the Woman's Auxiliary and the increased interest in your activities, both on the part of the ladies themselves and of the members of the profession, have been matters of great satisfaction. In my visits to the district societies and to many of the county societies I have been greatly pleased to see that in many instances the corresponding Woman's Auxiliary was being held, and often almost as well attended as the Medical Society. I hope this interest will spread until there is an active auxiliary in every county in which there is an organized medical society.

The medical profession is realizing more fully than ever before the value of the Woman's Auxiliary. When the wives and daughters of the physicians become acquainted in their Auxiliary meetings and form lasting friendships, it helps greatly toward bringing the physicians into closer relationship and does much toward preventing professional jealousies and misunderstandings.

At present also when certain powerful forces are making strenuous efforts to change the whole system of furnishing medical care in such a way that the medical profession would be under the domination of laymen and politicians, the members of the Woman's Auxiliary have a wonderful opportunity to help educate the public to the dangers of socialized or state medicine through your contacts with the people in your communities and especially with the leaders in the other organizations with which you are connected. It is necessary for Auxiliary members as well as physicians to inform themselves on these matters which are so vital to the welfare of the public as well as the medical profession. Many of these socialistic theories on first thought seem so plausible that they will appeal to the

public and it is only by being well informed concerning the disastrous operation of such plans that we can meet their arguments and successfully combat the propaganda being broadcast over the radio, through the press and from the platform concerning sickness insurance and other socialistic schemes for furnishing medical care. Splendid literature on the various phases of socialized medicine can be obtained from the Bureau of Medical Economics of the American Medical Association. It would be helpful for you to devote a sufficient proportion of your county and district programs to this subject for every member to become well informed and fully aware of their dangers to organized medicine. You will be in much better position to help crystallize public opinion against harmful legislation.

The splendid work which your President, Mrs. Sidbury, has done in the Parent-Teacher Associations, and particularly her work as State Chairman of the Summer Roundup, has attracted national attention, and I am sure each of you takes pride in her accomplishments. As a rule physicians' wives are the most influential women in the community. If each of you would emulate your president in using your influence to arouse more interest in child health and health education you would render a great service both to the public and to the medical profession.

Among the most serious health problems confronting our State are our high infant and maternal death rates. I would like to see you take upon yourselves, both individually and as a society, the responsibility of doing all that you can to improve this situation which is especially of such vital concern to every woman and which is anything but a credit to North Carolina. In spite of the fact that our infant death rate has been consistently very high, last year there were 1,071 more infant deaths than in 1933. Almost half of these deaths also occur before the age of two weeks. There was also a slight increase in the maternal death rate last year. Our very high maternal death rate has already given us a very unenviable reputation, there being only seven states with a higher rate, and only five states with a higher white rate.

It is said that the high maternal death rate and to a considerable extent also the high infant death rate are largely due to lack of prenatal care and to ignorant and poorly equipped midwives. At present midwives officiate at about 20% of the white and at about 80% of the colored births in North Carolina. Almost none of the women attended by midwives have prenatal care and the same is true of a considerable proportion of those attended by physicians, the physician only being called at the last minute. It is said that most of these maternal deaths are due to complications which could largely be prevented by proper prenatal care and that only a very small per cent of those whose maternal experiences end fatally have proper prenatal care. Every expectant mother should be taught the importance of proper care during this most critical period of her life. Every midwife should be licensed and should have the proper training and equipment. The State Board of Health will be glad to send you literature on the subject and will perhaps be able to furnish speakers for special programs

and possibly also nurses for teaching and examining midwives. You will doubtless be able to arouse enough enthusiasm in your Woman's Clubs and other organizations to secure the proper equipment for the midwives in your county who are unable to procure it themselves.

Probably the most far reaching results not only in reducing our high maternal and infant mortality rates but also in improving the health of our children will be accomplished through proper teaching in our schools. Would it not be wise for every child before leaving school to have a course not only in physiology and hygiene but also in dietetics and first aid, and for all girls to have additional teaching in infant care and the proper care of women during pregnancy? It is at times amazing to see the ignorance even of some teachers and college professors in matters pertaining to the well-being of their physical selves. Such courses would do much toward putting an end to hurtful superstitions, quacks and ridiculous cults. In using your influence to secure such courses of study in our public schools you will greatly aid both the public and the medical profession.

(Research Study—Mrs. Foy Roberson, Durham)

WILLIAM PETER MALLETT, M.D.

(Jan. 19, 1819—Oct. 16, 1889)

Prepared by

Dr. Wm. deB. MacNider, Chapel Hill, N. C.

William Peter Mallet was born at Fayetteville, North Carolina, January 19, 1819, being the second son of Charles Mallett, esquire, of that place. After completing his general education at Trinity College, Hartford, Connecticut, he was graduated a Doctor of Medicine from the Medical College of Charleston, South Carolina, in 1841.

He immediately entered upon a large and laborious practice in Fayetteville and surrounding country of Cumberland County. This practice he continued without intermission over a period of 15 years until his health was undermined and his life threatened. After recovering from this illness he sought health and recreation in farm life, but there was apparently no life for him outside of his profession and he soon returned to it, changing his residence from Fayetteville to Chapel Hill, North Carolina. This move was made in 1857. Likely entering into this change in residence was his desire that his children might benefit from the educational advantages offered at the State University. During his practice in Fayetteville and the surrounding country and throughout his long years of service as physician in Chapel Hill and the surrounding country he was known for his cleanliness, his gentleness and his studious nature. Books and medical journals were ever present either in his buggy or saddle bags.

At Chapel Hill he served as a general practitioner, surgeon and consultant for a large country community and was instrumental in establishing the first infirmary at the University of North Carolina. Both here and in

the University dormitories he served as physician to the University students. The first University infirmary which has been referred to above was a three-room cottage located in the southwest corner of what was then known as the Leo-Wheat home. The home on this lot was later occupied by Dr. Eben Alexander and at the present time the Woman's Building of the University of North Carolina occupies the same location.

At the opening of the Civil War Dr. Mallett volunteered his services, entering the Confederate Army as surgeon and remained until he was discharged on account of illness. The latter part of his army service found him in the General Hospital in Richmond, Virginia, where he was associated with Dr. Hunter McGuire.

Dr. Mallett belonged to that group of thoughtful, studious physicians of an older type who thought perhaps only of their patient's welfare and took the utmost care in writing up the illnesses of their various patients. In addition to Dr. Mallett's ability as a general practitioner there are perhaps three phases of his medical activity which should be mentioned in some detail on account of the forethought and wisdom of the man which they showed.

Dr. Mallett must have had a natural bent for surgery, as is indicated by the reputation of a surgical nature which he established at Fayetteville and Cumberland County before he moved to Chapel Hill. His surgical ability is clearly indicated by the account of one of his operations which was reported by Dr. R. H. Whitehead in the North Carolina Medical Journal, Vol. 32, p. 13, 1893. This operation was that of a cesarean section done by him in 1852.

The operation was performed in the country near Fayetteville and Dr. Mallett was assisted by a physician, Dr. H. A. McSwain. The patient was undersized and seventeen years old, was in labor with her first child when Mallett visited her, March 26, 1852. On rupturing the tough membranes the cord prolapsed and a fully developed dead child's head was locked above the pubes in transverse presentation. After a period of patience, which was one of Mallett's characteristics, and following numerous attempts to readjust the head and permit a delivery, he presented the alternative to the patient of inactivity and certain death or a cesarean section and, I suppose, with his frankness and honesty there was very little hope given for such a serious operation done in the country without the care of a nurse and with the aid of one physician. It is very interesting to note that he operated without an anesthetic, even though both chloroform and ether were available for anesthetic purposes at this date. The reason for this was most interesting. He was operating on a Scotch Presbyterian lady who then, as now, had a mind of her own, and, thank God, faith in something! She likely called to mind, even at such a moment of stress, the scriptural statement which comes from Genesis 3rd: 16, which reads as follows: "Unto the woman he said, I will greatly multiply thy sorrow, and thy conception: in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee." For this

reason this lady refused to take an anesthetic in order to give birth to a child. In the same connection it is interesting that she was willing, and did, take chloroform to permit certain manipulations before the operation was decided upon, but when the time came for the child to be delivered her conscience prevented her from seeking the benefit of this agent. Likely, of course, what happened was that she was given opium, that its pain relieving power was increased by the use of alcohol in some form, so that at least she was semi-conscious during the time of this operation.

The incision for this operation extended from four inches above the umbilicus to within three inches of the pubes. The hemorrhage and shock were slight. The dead child was delivered and the woman was dressed with four or five needles transfixing and uniting the sides of the wound by twisted sutures. Adhesive straps and a row of compresses were used to give good lateral support. A cold water dressing was then employed for four days during which time the patient abstained from food, was given perfect quiet of mind and body, and occasional saline solutions. The upper two-thirds of the wound healed by first intention. In nine days the patient was out of bed. She gave birth to several children later than this.

This operation is certainly one of interest on account of the early period at which it was done. It was done in the country virtually without aid, and that the recovery of the woman was not interfered with by the development of an infection.

The second characteristic which might be mentioned of Dr. Mallett's work was his great attention to and insistence upon cleanliness. It should, of course, be recalled that this was a day before the germ theory had been accepted and before the use of chemical antiseptics was employed to any extent. Both in Mallett's practice in Fayetteville and in Chapel Hill and surrounding country, he had the reputation of very rarely having a case of child bed fever. This reputation was likely dependent upon his insistence upon cleanliness, the use of hot water, and an abundance of it, the employment of soap and hot water, both to the hands and the parts of the patients which the hands came in contact with, not only in obstetrical practice, but even in minor surgical operations.

The third point which may be made concerning Dr. Mallett's professional work was that he used either hot water or cold water in the treatment of febrile conditions at a period of medical understanding when such a procedure was considered generally dangerous, and he furthermore insisted that in febrile patients and in any illness that the main remedy was fluid, water and an appropriate diet. These things sound simple now, but if we realize that we are talking about the activity of a person between 1852 and later than this, such foresight both as to cleanliness, the use of water externally, and the fluid internally, to say the least, indicates thoughtfulness and fearlessness on the part of the man.

I well remember as a child seeing another child with malarial fever, delirious, so dehydrated that the tongue would not move, and that the

lips would not meet over the teeth, treated in this fashion by Dr. Mallett. He ordered a tub of hot water in which he placed the child and placed a bucket of cold water beside it and gave the child all the water it chose to drink. The result was that the temperature was reduced, the tissues were hydrated and the child recovered.

A sketch of Dr. William P. Mallett by the late Dr. George T. Winston, former President of the University of North Carolina, which appears in the University magazine, Vol. 21, No. 2, p. 74, in the year 1890, the following statement may be found: "For more than 30 years Dr. William P. Mallett was a citizen of Chapel Hill, and was intimately associated with the life of the University. He knew it at the fullness of its prosperity, stood faithfully by it at its death and helped to bring it again to life at its resurrection in 1875. He was active and faithful as a student, although cautious and conservative as a practitioner and kept himself furnished with the newest medical literature which he read with delight. Although socially disposed and capable of both giving and receiving pleasure from social intercourse, his spare time was given to professional reading even to the day of his death. I have seen him often at the age of 70 after 40 years experience as a practitioner studying late at night with the zeal of a young man entering the profession. It was his habit to make careful and long continued study of special cases; not merely his own patient and his symptoms, but of similar cases treated elsewhere by other physicians and recorded in medical literature. His medical instinct would not let him give up a case. He never abandoned hope until life had fled, although he often fought merely to delay death. There can be no doubt that this unyielding instinct for triumph over disease prolonged the life of many of his patients. Although slow, cautious and conservative, Dr. Mallett was far from timid. When action was resolved upon he was prompt, encouraging and bold. His slow caution was thrown aside and his firmness and hopefulness developed into enthusiasm when his services were invoked for surgery. He remained perfectly self-possessed and cool, tender and refined; but his work was done swiftly, boldly and efficiently. Dr. Mallett made diligent use of the talents entrusted to his keeping. He was by nature and education a gentleman, and the gentleness of his life made gentler the life of the community; he was by nature and education a physician and he healed with the charity and sympathy and gentleness of the Great Physician. His life was of unbroken loyalty to a great profession; his reverence was deep, strong and abiding. Familiarity with disease and death had strengthened his reliance upon God. His religion was quiet and unostentatious but his convictions were fervent and full of sustaining power; I doubt if he ever felt far from the presence of the Almighty. He died, as he had lived, quietly, gently, bravely and hopefully.

The evening before he died he visited a patient, the child of the late Thomas Hume, Professor of English at the University of North Carolina. He was much exhausted by going upstairs and fainted on his way home. The next morning he was better and relished his breakfast. In half an

hour he felt faint and his breathing was difficult. He examined his own pulse and looked at his own fingernails and realized that death was near. In this moment, as at many others, his desire was for his church and his minister, which had meant so much to him during his long life of work and practice. He directed his son, John Mallett, and Mr. Robert McRae to hold him up in bed in order that he might live until a minister of the Episcopal Church, a Reverend Mr. Prentiss, might come to him. Even at this time his thought was of other people and of his patients. He inquired of Mr. McRae as to the welfare of the little boy who he had treated the day before, and proceded to prescribe for him. The clergyman arrived and was, of course, anxious to relieve his physical suffering. The physician within him told him that he was past such aid. He asked for the prayers of his church and repeated the Lord's Prayer. Turning to his son and to Mr. McRae he directed them to lay him down and permit him to die. At such a moment there was, of course, evidence of emotion in the sick room. He raised his hand with the remark that "I beg of you make no confusion over such a natural occurrence."

Dr. Mallett was buried on the 17th of October, 1889, in the Chapel Hill cemetery.

ADDRESS

By Mrs. John B. Cranmer, Wilmington

Madam President, Fellow Members of the Woman's Auxiliary to the Medical Society of North Carolina:

Will you think with me for a few minutes on the significance of this familiar form of greeting? It would be just as effective and as easy to begin what one has to say without these words but they are necessary to create an atmosphere in which to talk, and in which to listen, because they strike at once a note of fellowship; of coöperation and of loyalty without which very little can be accomplished in the way of inspiration. They issue to us a challenge of loyalty to our presiding officer; and of coöoperation *in her plans* which *must also be our plans*. They stir in us a desire to work together unselfishly and untiringly to prove our right to be what we claim to be—auxiliary to the Medical Society—and they give us the sense of joint ownership in the aims and ideals of our organization and of joint responsibility for the successful carrying out of these aims and ideals.

We know that, in the last analysis, the success of any band of workers is mainly due to the efforts of the individual. Constructive leadership is much to be desired but—after all—the successful leader has once been the faithful member of the organization and, having proven that the "chain will be no stronger than the weakest link," she is able to have no weak link in her own chain because she has learned that people everywhere will measure up to the standard that is set up for them and which is maintained to the highest degree by both leader and individual member.

The poet, Cowper, has said that "Knowledge is proud that he has learned so much" and "Wisdom is humble that he knows no more." There

are many things that we all know about this, our Auxiliary, and many things that we do not know, therefore I have no hesitation in saying that the first requirement for admission into this body of women and for continued membership in the same (which is easily one of the most worthwhile of all the activities in which a doctor's wife can engage) is the desire to be intelligently informed in the history of the national organization as well as that of the State; to enter fully into the aims and ideals that are set forth and to carry out with precision and interest every task to which we set our hands and hearts.

There is a section of the National Constitution of the Woman's Auxiliary to the American Medical Association that reads as follows and with which you are all familiar: "The objects of this Auxiliary shall be, (1) through its members to extend the aims of the medical profession to all organizations which look to the advancement of health and education; (2) to assist in the entertainment at all American Medical Association's Convention; (3) to promote acquaintance among physicians' families that fellowship may increase; (4) to do such work as may be approved from time to time by the American Medical Association."

These same objects govern the State auxiliaries, of which there are at the present time ...., and the county auxiliaries whose number should be the complete list of counties in the State for there is only strength in perfect unity and each county auxiliary functioning capably and effectively contributes to the success of the State organization in like ratio. In presenting briefly the reasons for a Woman's Auxiliary and for 100% membership in it, we must consider them from three standpoints and while we have heard them many times it is also well to review them many times. Life is so complex these days; so full of activities; and it is hard to give of ourselves to everything with equal amount of energy and efficiency. In making decisions the element of comparisons will always enter in; while we have heard all of our lives that "comparisons are odious" they are also pertinent, and as doctors' wives it behooves us to make these comparisons, and in so doing find an answer to the question that comes up so often when we are challenged to do this or that for some of the many things that claim our attention. Where in my busy life must I put the greater emphasis?

Leaving out the demands of the religious life I say without fear of contradiction that however it may cause her to sacrifice interest, time or pleasure, a doctor's wife should put her Auxiliary first and so arrange her time and talents that she will be free to give of her best to the fulfillment of the six functions of this Auxiliary which as you know are as follows:

Social—to promote good fellowship; to aid in entertainment at medical meetings and to increase attendance at such meetings.

Philanthropic—to give community service wherever such service is required, *relative to the work of the medical profession.*

Legislative—Education in medical and health laws and participation in such legislation *as is requested* by the Medical Society to which we belong.

Educational—to inform ourselves concerning questions of personal and public hygiene, community coöperation, medical and health laws—national, State and local. State and Health administration and the relation of the medical profession to the public.

Public Relations—to aid the medical profession in its educational work with the public through organizations to which we belong. (a) By accepting positions of leadership in such organizations, particularly on health committees, so that authentic literature may be selected and that only such types of health projects may be carried on as are shown by our Advisory Councils to be scientifically sound. (b) By promoting the distribution of *Hygeia*—the health magazine published by the American Medical Association.

These objects are so clearly stated—so wisely safeguarded under the guidance of the medical profession and so diverse in character—that it will be an easy matter to inform ourselves on each detail of these plans, to give our whole-hearted coöperation to the carrying out of these objectives, and, in so doing, to help make our county auxiliary such an important part of the State Association that its influence will be felt in every line of endeavor and its example followed to the ultimate success of the work.

First things must be first if we are to have a well rounded life, and however widely our interests may be distributed, however full are our days, I challenge every doctor's wife present to go home from this meeting, with its fine record of things accomplished and of aims presented, with a firm resolve to so rearrange her time as to be ready at the call of her county auxiliary officers to answer with loyal enthusiasm and with strong purpose to make her work in this particular unit the strongest, the most efficient and the most far-reaching of all her activities.

There is no reason to tell you why this must be so. We all know the value of this great body of unselfish men who give so freely of their time and talents to the service of their fellow men. We know how inestimable is our privilege of sharing in their work; therefore with our interest awakened by the words that we have heard here; our loyalty challenged by the need for renewed effort and with keener desire for service in an auxiliary whose reason for existence lies in the faithful fulfillment of the duties assigned to it, in furtherance of the objectives of the medical profession of North Carolina, we will be ready and eager to do all that is humanly possible to make ours the greatest auxiliary of them all.

MINUTES

The Annual Meeting of the Auxiliary to the State Medical Society met in the Men's Card room of The Carolina, Pinehurst, Tuesday, May 7, eleven o'clock.

The meeting opened with the Lord's Prayer, led by Mrs. J. W. Huston, after which the Thirteenth Annual Meeting was declared in session by the President, Mrs. J. Buren Sidbury.

Greetings were brought by Mrs. John Symington of Carthage. The response by Mrs. Bruce Beasley of Fountain.

Very appropriate memorial services were held by Mrs. I. H. Manning, Chapel Hill.

The reading of the minutes was dispensed with but on motion were to be read before a special committee.

The treasurer's report was read by Mrs. E. C. Judd, Raleigh. This report was accepted and a rising vote of thanks given her for the splendid work she has done.

Greetings from the State Medical Society President, Dr. P. P. McCain, were given.

The Chairman of Organization, Mrs. J. W. Huston, gave her report, after this the list of Councillors was called and any additional information from them was in order.

Reports—

Mrs. W. T. Rainey, Chairman of Bed
Mrs. R. A. Schoonover, Chairman of Loan Fund
Mrs. R. D. McMillan, Chairman Public Relations
Mrs. Fred R. Taylor, Hygeia Chairman
Mrs. Julian A. Moore, Historian
Mrs. P. P. McCain, Publicity
Mrs. Sidney Smith, Chairman of Exhibits. (A most instructive poster was on display by her.)
Mrs. A. H. Elliot, Corresponding Secretary
Mrs. K. B. Pace, Recording Secretary

The recommendations from the Executive Board were read and adopted.

New Business.

Due to illness the guest speaker, Mrs. J. Bonar White was unable to attend. Mrs. John B. Cranmer of Wilmington very graciously filled her place.

Report of American Medical Auxiliary meeting by Mrs. M. L. Stevens, Asheville.

Report of Research Committee by Mrs. Foy Roberson.

The Chairman of the Nominating Committee, Mrs. W. P. Knight, gave the following report:

President—Mrs. C. P. Eldridge
First Vice-President—Mrs. J. Buren Sidbury
Second Vice-President—Mrs. W. T. Rainey
Third Vice-President—Mrs. R. A. Schoonover

Treasurer—Mrs. Fred R. Taylor
Corresponding Secretary—Mrs. Verne Caviness
Recording Secretary—Mrs. K. B. Pace
President-elect—Mrs. J. R. Terry
Chairman Board of Past Presidents—Mrs. P. P. McCain

The new officers were inducted into office in a most appropriate manner by Mrs. P. P. McCain.

Rising vote of thanks was given to the retiring President, Mrs. J. Buren Sidbury.

The new President, Mrs. C. P. Eldridge, announced a board meeting to be held Wednesday morning, 9:30 o'clock.

The Chairman of the Entertainment Committee, Mrs. John Symington, invited the ladies to a tea and musicale at the Country Club, Tuesday afternoon—banquet at The Carolina, 7:00 p.m., President's Reception and Ball 9:00 p.m. Drive to Orchid Gardens, Wednesday, 10:00 a.m.

As there was no further business the meeting adjourned.

Respectfully submitted,
LIDA TAYLOR PACE, *Recording Secretary.*

ADVISORY COMMITTEE FROM MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA TO THE WOMAN'S AUXILIARY

Dr. Verne C. Caviness, Chairman, Raleigh
Dr. I. Thurman Mann, High Point
Dr. W. T. Rainey, Fayetteville

ROSTER OF MEMBERS

1934 - 1935

Abel, Mrs. J. F.....Waynesville
Adams, Mrs. L. C.....LaGrange
Alexander, Mrs. G. T.....Thomasville
Anderson, Mrs. Chas. A.....Burlington
Armstrong, Mrs. C. W.....Salisbury
Ashworth, Mrs. W. C.....Greensboro
Bailey, Mrs. C. W.....Rocky Mount
Baker, Mrs. H. M.....Lumberton
Banner, Mrs. C. W.....Greensboro
Barnes, Mrs. Dempsey.....Ashboro
Barefoot, Mrs. G. B.....Wilmington
Basnight, Mrs. Thomas G.....Stokes
Bass, Mrs. H. H.....Henderson
Baynes, Mrs. R. H.....Roxboro
Beach, Mrs. W. R.....Hudson
Beam, Mrs. H. M.....Roxboro
Beam, Mrs. R. S.....Lumberton
Beard, Mrs. G. C.....Atkinson
Beasley, Mrs. E. B.....Fountain
Beckwith, Mrs. R. P.....Roanoke Rapids
Benson, Mrs. N. O.....Lumberton
Bellamy, Mrs. Harlee.....Wilmington
Bittinger, Mrs. S. M.....Sanatorium
Blair, Mrs. A. McNeil.....Southern Pines
Blair, Mrs. Andrew.....Charlotte
Blackwelder, Mrs. Verne.....Lenoir
Black, Mrs. O. R.....Landis
Blanchard, Mrs. T. W.....Hobbsville
Bost, Mrs. T. C.....Charlotte
Bowman, Mrs. H. E.....Aberdeen
Bowman, Mrs. E. L.....Lumberton
Bowles, Mrs. Francis N.....Durham
Bridger, Mrs. D. H.....Bladenboro
Brewer, Mrs. J. S.....Roseboro
Britt, Mrs. J. N.....Lumberton
Brockman, Mrs. H. L.....High Point
Brooks, Mrs. R. E.....Burlington
Brown, Mrs. G. W.....Raeford
Buie, Mrs. R. M.....Greensboro
Bulla, Mrs. A. C.....Raleigh
Bulluck, Mrs. E. S.....Wilmington
Byerly, Mrs. W. G.....Cooleemee

Caldwell, Mrs. Morris.....Wilmington
Carpenter, Mrs. C. C.....Wake Forest
Carter, Mrs. T. L.....Gatesville
Carr, Mrs. R. L.....Rose Hill
Carter, Mrs. Paul C.....Madison
Cathell, Mrs. J. E.....Lexington
Casteen, Mrs. Kenan.....Leakesville
Caviness, Mrs. Verne.....Raleigh
Chester, Mrs. P. J.....Southern Pines
Chiles, Mrs. George C.....Sanford
Clyatt, Mrs. C. E.....Denton
Cobb, Mrs. Donnell C.....Goldsboro
Codington, Mrs. Herbert.....Wilmington
Cooper, Mrs. G. M.....Raleigh
Corpening, Mrs. O. J.....Granite Falls
Covington, Mrs. J. M. C...Roanoke Rapids
Cozart, Mrs. W. S.....Fuquay Springs
Cranmer, Mrs. J. B.....Wilmington
Crisp, Mrs. S. M.....Greenville
Craven, Mrs. F. C.....Ashboro
Crispell, Mrs. R. S.....Durham
Crouch, Mrs. A. McR.....Wilmington
Crowell, Mrs. L. A.....Lincolnton
Crumpler, Mrs.....Wilmington
Currie, Mrs. D. S.....Parkton
Daughtridge, Mrs. A. L.....Rocky Mount
Davis, Mrs. P. B.....High Point
Davis, Mrs. J. W.....Statesville
Davis, Mrs. J. M.....Wadesboro
Davis, Mrs. R. B.....Greensboro
Dawson, Mrs. J. N.....Bolton
Dees, Mrs. Rigdon.....Greensboro
Dickie, Mrs. J. W.....Southern Pines
Dickinson, Mrs. E. T.....Wilson
Dixon, Mrs. G. G.....Ayden
Dillard, Mrs. G. P.....Draper
Dosher, Mrs. Wm. R.....Southport
Durham, Mrs. C. W.....Greensboro
Dula, Mrs. Fred.....Lenoir
Eldridge, Mrs. C. P.....Raleigh
Ellington, Mrs. A. J.....Burlington
Elliott, Mrs. J. A.....Charlotte
Elliott, Mrs. W. F.....Lincolnton
Elliott, Mrs. A. H.....Wilmington
Evans, Mrs. J. E.....Wilmington
Evans, Mrs. L. B.....Windsor
Farthington, Mrs. L. E.....Wilmington
Fay, Mrs. F. O.....Harbor Island
Farrington, Mrs. R. K.....Thomasville
Fergerson, Mrs. R. T.....Charlotte
Ferneyhough, Mrs. W. T.....Reidsville
Felts, Mrs. R. L.....Durham
Fetzer, Mrs. Paul.....Reidsville
Fleming, Mrs. M. I.....Rocky Mount
Flagge, Mrs. P. W.....High Point
Fortune, Mrs. A. F.....Greensboro
Fox, Mrs. P. G.....Raleigh
Fox, Mrs. Norman.....Guilford College
Freeman, Mrs. J. D.....Wilmington
Gambrell, Mrs. G. C.....Lexington
Garris, Mrs. F. H.....Lewiston
Gibson, Mrs. M. R.....Raleigh
Gilmore, Mrs. C. M.....Greensboro
Goodman, Mrs. A. B.....Lenoir
Gold, Mrs. Ben.....Shelby
Graham, Mrs. Ben.....Wilmington
Griffiin, Mrs. Harvey L.....Ashboro
Griffiin, Mrs. H. W.....Hickory
Green, Mrs. Tom.....Wilmington
Groome, Mrs. J. G.....High Point
Gwyn, Mrs. H. L.....Yanceyville
Hackney, Mrs. Ben H.....Lucama
Hamner, Mrs. Douglas.....Lenoir
Hamilton, Mrs. J. R.....Raleigh
Hambrick, Mrs. R. T.....Hickory
Hare, Mrs. R. Bryant.....Wilmington
Haris, Mrs. L. W.....Charlotte
Harrison, Mrs. E. T.....High Point
Harden, Mrs. Graham.....Burlington
Harvey, Mrs. W. W.....Farmer
Hedrick, Mrs. Clyde R. .....Lenoir
Helms, Mrs. J. B.....Morganton
Hege, Mrs. J. Roy.....Winston-Salem
Herman, Mrs. F. L.....Conover
Herman, Mrs. Charles.....Statesville
Hester, Mrs. William.....Reidsville
Hester, Mrs. J. R.....Wendell
Hicks, Mrs. V. M.....Raleigh
Hickman, Mrs. W. E.....Hudson
Hill, Mrs. M. D.....Raleigh
Hoggard, Mrs. John T.....Wilmington
Holt, Mrs. D. W.....Greensboro
Holmes, Mrs. A. B.....Fairmont
Hooper, Mrs. John S.....Chapel Hill
Hooper, Mrs. Joe.....Wilmington
Houser, Mrs. Forest.....Cherryville
Hovis, Mrs. Andrew.....Wilmington
Howard, Mrs. C. E.....Goldsboro
Hubbard, Mrs. C. C.....Farmer
Huffines, Mrs. Thos. R.....Asheville
Hunter, Mrs. J. W.....Cary
Hunt, Mrs. W. B.....Lexington
Huston, Mrs. J. W.....Asheville
Jackson, Mrs. W. L.....High Point
Jarboe, Mrs. Parran.....Greensboro
Jennings, Mrs. C. W.....Greensboro
Jennings, Mrs. R. G.....Thomasville
Johnston, Mrs. W. W.....Manteo
Johnson, Mrs. George.....Wilmington
Johnson, Mrs. A. N.....Garland
Johnson, Mrs. R. W.....Apex
Johnson, Mrs. T. C.....Lumberton

Johnson, Mrs. J. R. ..... Ramseur
Johnson, Mrs. H. L. ..... Elkin
Jones, Mrs. C. C. ..... Apex
Judd, Mrs. J. M. ..... Varina
Judd, Mrs. E. C. ..... Raleigh
Keiger, Mrs. J. A. ..... Greensboro
Kent, Mrs. Alfred ..... Granite Falls
Kennedy, Mrs. John P. ..... Charlotte
King, Mrs. E. C. ..... Wake Forest
Knight, Mrs. W. P. ..... Greensboro
Lackey, Mrs. M. A. ..... High Point
Lancaster, Mrs. ..... Wilmington
Lancaster, Mrs. F. J. ..... Lexington
Laughinghouse, Mrs. Charles .... Greenville
Lawrence, Mrs. Ben J. ..... Raleigh
Leonard, Mrs. J. C. ..... Lexington
London, Mrs. Arthur N. ..... Durham
Long, Mrs. T. W. M. ..... Roanoke Rapids
Long, Mrs. E. L. ..... High Point
Lowery, Mrs. J. R. ..... Salisbury
Love, Mrs. B. E. ..... Roxboro
Lyday, Mrs. R. O. ..... Greensboro
McAnally, Mrs. J. W. ..... High Point
McAdams, Mrs. C. R. ..... Belmont
McBee, Mrs. Paul ..... Bakerville
McCain, Mrs. P. P. ..... Sanatorium
McCain, Mrs. W. R. ..... High Point
McCain, Mrs. H. W. ..... High Point
McCall, Mrs. A. C. ..... Asheville
McClelland, Mrs. J. O. ..... Maxton
McFayden, Mrs. O. L. ..... Fayetteville
McGeachey, Mrs. R. S. ..... Weldon
McGee, Mrs. J. W. ..... Ralegh
McGehee, Mrs. J. W. ..... Reidsville
McIver, Mrs. Lynn ..... Sanford
McLean, Mrs. E. K. ..... Charlotte
McKnight, Mrs. R. B. ..... Charlotte
McLaughlin, Mrs. C. S. ..... Charlotte
McMillian, Mrs. Rosco D. ..... Red Springs
McPheeters, Mrs. S. B. ..... Charlotte
Mann, Mrs. I. T. ..... High Point
Mallory, Mrs, S. A. ..... Yanceyville
Maness, Mrs. A. K. ..... Greensboro
Manning, Mrs. I. H. ..... Chapel Hill
Marr, Mrs. M. W. ..... Pinehurst
Martin, Mrs. J. A. ..... Lumberton
Martin, Mrs. J. W. ..... Roanoke Rapids
Martin, Mrs. W. F. ..... Charlotte
Matthews, Mrs. M. L. ..... Sanford
Matthews, Mrs. Vann ..... Charlotte
Matthews, Mrs. M. W. .. Leakesville-Spray
Matthews, Mrs. B. B. ..... Shelby
Matheson, Mrs. J. G. ..... Ahoskie
Matheson, Mrs. R. A., Jr. ..... Raeford
Mebane, Mrs. W. C. S. ..... Wilmington
Mebane, Mrs. Billy ..... Wilmington
Merritt, Mrs. J. H. ..... Roxboro
Mudgette, Mrs. W. C. ..... Southern Pines
Milham, Mrs. C. G. ..... Sanatorium
Milliken, Mrs. J. S. ..... Southern Pines
Mitchiner, Mrs. J. S. ..... Raleigh
Mock, Mrs. F. L. ..... Lexington
Moore, Mrs. Houston ..... Wilmington
Montgomery, Mrs. H. M. ..... Burlington
Moore, Mrs. B. D. ..... Mount Holly
Moore, Mrs. Julian A. ..... Asheville
Motley, Mrs. T. E. ..... Roxboro
Mudgett, Mrs. W. C. ..... Southern Pines
Murchison, Mrs. David ..... Wilmington
Murphy, Mrs. W. B. ..... Snow Hill
Murray, Mrs. R. L. ..... Raeford
Myers, Mrs. Alonzo ..... Charlotte
Nalle, Mrs. B. C. ..... Charlotte
Newman, Mrs. Harold ..... Salisbury
Newton, Mrs. H. L. ..... Charlotte
Nesbitt, Mrs. Chas. T. ..... Wilmington
Nichols, Mrs. A. F. ..... Roxboro
Nichols, Mrs. R. E. J. ..... Durham
Nicholson, Mrs. B. M. ..... Enfield
Northington, Mrs. J. M. ..... Charlotte
Ogburn, Miss Hilda ..... Greensboro
Ormand, Mrs. Allison ..... Sanatorium
Orr, Mrs. Charles C. ..... Asheville
Pace, Mrs. K. B. ..... Greenville
Pace, Mrs. S. E. ..... Leaksville
Papineau, Mrs. Alban ..... Sanatorium
Parker, Mrs. O. L. ..... Clinton
Patterson, Mrs. Reed ..... Charlotte
Peeler, Mrs. C. N. ..... Charlotte
Person, Mrs. J. B. ..... Selma
Perry, Mrs. D. R. ..... Durham
Phillips, Mrs. E. N. ..... Hope Mills
Phillips, Mrs. C. H. ..... Thomasville
Phillips, Mrs. C. C. ..... Charlotte
Pitts, Mrs. W. I. ..... Lenoir
Powers, Mrs. P. P. ..... Wilmington
Proctor, Mrs. Ivan, Jr. ..... Raleigh
Prizer, Mrs. E. L. ..... Southern Pines
Rainey, Mrs. W. T. ..... Fayetteville
Ray, Mrs. S. P. ..... Leakesville
Ray, Mrs. J. B. ..... Leakesville
Redwine, Mrs. J. D. ..... Lexington
Register, Mrs. F. M. ..... Kinston
Rhudy, Mrs. B. E. ..... Greensboro
Richardson, Mrs. W. P. ..... Raleigh
Robertson, Mrs. J. W. ..... Wilmington
Robertson, Mrs. J. M. ..... Charles
Robinson, Mrs. C. W. ..... Charlotte
Robinson, Mrs. Donald E. ..... Burlington
Rodman, Mrs. R. B. ..... Wilmington
Rogers, Mrs. J. R. ..... Raleigh
Rosser, Mrs. R. G. ..... Vass

Royal, Mrs. Ben F.....Morehead City
Royster, Mrs. F. H.....Roanoke Rapids
Royster, Mrs. Hubert.....Raleigh
Rudd, Mrs. Paul D.....Reidsville
Ruffin, Mrs. D. W.....Ahoskie
Russell, Mrs. Charles.....Granite Falls
Sawyer, Mrs. C. J.....Windsor
Schoonover, Mrs. R. H.....Greensboro
Scruggs, Mrs. W. M.....Charlotte
Seay, Mrs. T. W.....East Spencer
Shaw, Mrs. Colin.....Atkinson
Shaw, Mrs. W. G.....Wagram
Shaw, Mrs. J. A.....Fayetteville
Sharp, Mrs. Frank.....Greensboro
Sharpe, Mrs. C. R.....Lexington
Shaver, Mrs. W. T.....Albemarle
Shelbourne, Mrs. P. A.....Greensboro
Sidbury, Mrs. J. B.....Wilmington
Simmonds, Mrs. H. A.....
Simmons, Mrs. L. L.....Greensboro
Sisk, Mrs. C. N.....Waynesville
Slate, Mrs. Marvin.....High Point
Sloan, Mrs. Henry.....Charlotte
Sloop, Dr. Mary Martin.....Crossmore
Smith, Mrs. O. F.....Scotland Neck
Smith, Mrs. J. M.....Rowland
Smith, Mrs. Sidney.....Raleigh
Smith, Mrs. J. E.....Windsor
Smith, Mrs. J. A.....Lexington
Smith, Mrs. W. G.....Wendell
Smith, Mrs. W. G.....Thomasville
Spoon, Mrs. S. C.....Burlington
Spruill, Mrs. Joseph .....Jamestown
Squires, Mrs. Claude B.....Charlotte
Stanton, Mrs. D. A.....High Point
Stanton, Mrs. T. M.....High Point
Stirewalt, Mrs. N. S.....High Point
Stevens, Mrs. M. L.....Asheville
Strickland, Mrs. E. L.....Wilson
Strosnider, Mrs. C. F.....Goldsboro
Sykes, Mrs. R. P.....Ashboro
Sykes, Mrs. J. B.....Rocky Mount
Symington, Mrs. J.....Carthage
Sullivan, Mrs. V. T.....Wilmington
Suiter, Mrs. W. G.....Weldon
Tankersley, Mrs. J. W.....Greensboro
Taylor, Mrs. F. R.....High Point
Taylor, Mrs. J. T.....Greensboro
Taylor, Mrs. Wesley.....Greensboro
Taylor, Mrs. G. N.....Mooresville
Templeton, Mrs. J. Y.....Mooresville
Terry, Mrs. J. R.....Lexington
Terry, Mrs. Geo. H. B.....Oteen
Thomas, Mrs. C. D.....Sanatorium
Thornton, Mrs. W. F.....Sanatorium
Tice, Mrs. Walter.....High Point
Todd, Mrs. L. C.....Charlotte
Vann, Mrs. H. M.....Wake Forest
Vestal, Mrs. W. J.....Lexington
Warren, Mrs. R. F.....Prospect Hill
Warwick, Mrs. H. C.....Greensboro
Weathers, Mrs. Bahnson..Roanoke Rapids
Wessell, Mrs. J. C.....Wilmington
Whisnant, Mrs. Albert M.....Charlotte
White, Mrs. W. M.....Lenoir
Whitehead, Mrs. S. L.....Asheville
Williams, Mrs. J. H.....Sanatorium
Williams, Mrs. John.....Asheville
Williams, Mrs. L. P.....Edenton
Wilson, Mrs. C. L.....Lenoir
Wilkerson, Mrs. R. W.....Wake Forest
Willis, Mrs. A. P.....Candler
Winkler, Mrs. Harry.....Charlotte
Winstead, Mrs. S. L.....Asheville
Wood, Mrs. E. J.....Wilmington
Wood, Mrs. George.....High Point
Wooten, Mrs. W. I.....Greenville
Wright, Mrs. J. B.....Raleigh
Yoder, Mrs. Paul.....Winston-Salem
Yokley, Mrs. R. V.....Thomasville
York, Mrs. A. C.....High Point
Zimmerman, Mrs. R. W.....Lexington

PROCEEDINGS

Twenty-Fifth Annual Meeting

OF THE

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

President
Dr. Z. P. Mitchell

Secretary
Dr. G. Fletcher Reeves

CAROLINA HOTEL
PINEHURST, NORTH CAROLINA
MAY 6, 1935

PROCEEDINGS

Twenty-Fifth Annual Meeting

OF THE

NORTH CAROLINA PUBLIC HEALTH ASSOCIATION

The North Carolina Public Health Association, Dr. Z. P. Mitchell, President, Dr. G. Fletcher Reeves, Secretary, held its annual meeting at Pinehurst, morning, afternoon and evening, May 6, 1935, and the following papers were read.

Taking cognizance of the passing of Dr. James M. Parrott, former State Health Officer, the following was offered by the committee:

The officers for 1935-'36 are:

R. S. McGeachy, M.D., Weldon, President
R. M. Buie, M.D., Greensboro, Vice-President
A. H. Elliott, M.D., Wilmington, Secretary

RESOLUTIONS

Whereas, the North Carolina Public Health Association has lost a great leader and sympathetic adviser in the death of Dr. J. M. Parrott, State Health Officer, therefore

Be It Resolved that we extend to the family of Dr. Parrott our sincere sympathy in their bereavement and that we urge the members of this Association to keep in mind the excellence of his work and as individual members try to emulate his example.

Whereas, the President of this Association has brought to the attention of its members one of its major public health problems, which apparently should receive more attention from health workers and physicians generally, therefore

Be It Resolved that this Association use every opportunity to keep the public informed as to the needs of the maternity and infancy program; that the Association express to the State Board of Health its willingness to continue its support and coöperation in working out any feasible program.

Whereas, during recent years of financial depression, health departments have uncomplainingly borne their part in reduced personnel and curtailed activities and which curtainment in our opinion will eventually surely result in increased sickness and death rates, and whereas times generally now seem to be better, therefore

Be It Resolved that the Public Health Association hereby recommends that all local appropriating bodies be asked to increase as rapidly as possible appropriations for health work to the end that local health departments may be enabled to carry on effective programs for the prevention of disease and premature death and the promotion of health in their respective communities.

Whereas, the State Laboratory of Hygiene has long since outgrown the quarters which were originally designed for this organization and whereas suitable buildings and equipment are absolutely essential for this organization if it is to fulfill its function, therefore

Be It Resolved that we recommend to the State Board of Health that steps be taken to provide adequate and proper equipment, quarters and personnel for the State Laboratory of Hygiene as early as feasible.

Resolved, that we extend to the management of the Carolina Hotel and to the Moore County Medical Society our thanks and appreciation for the use of the hotel and for the facilities and entertainment extended the Association.

Respectfully submitted,

R. L. Carlton,
C. N. Sisk,
C. C. Hudson,
Committee.

May 6, 1935.

IN MEMORY OF DR. JAMES M. PARROTT

By Geo. M. Cooper

This Association would dishonor itself did it not place in the permanent records of this Annual Meeting a memorial to the passing of Dr. Parrott. State Health Officer of North Carolina, and therefore head of the State health work in name and fact, from July 1, 1931, to the hour of his death November 7, 1934, he was 60 years old when he died, full of honors if not of years. He was short ten years of the Biblical allotment, an undoubted victim of what we aggravatingly call "the depression." Dr. Parrott's contribution to the cause of public health will be much better appraised ten years from now than it is today. It will take the perspective of history to bring out to public view the value of his service.

In September, 1930, when his name was first mentioned for State Health Officer I was opposed to the idea. I think I am safe in asserting that practically every city and county health officer in the State shared my own apprehension. I had always held him in the highest esteem, but I felt that as all of his life had been spent in other activities and being well on in middle age he would have difficulty in acquainting himself with all the intricate problems of public health. I communicated these views to at least two or three personal friends. One of these letters I showed to Dr.

Parrott some months after he came to the Board. He read the letter and at once said, "Your position was right then and it is right now, I share the feeling fully."

Later on that winter after he was made a member of the Board to succeed Dr. Thompson, and I had the opportunity to see the position he assumed toward the numerous difficulties then confronting the Board, and particularly his course with the Legislature of 1931 I became his supporter for the office. I have never regretted it. He was without a doubt one of the best executive officers I have ever seen. I have never experienced happier years than my work with him. Not one time did he ever "butt in" in the conduct of my own division work simply to exercise his authority. Our respect and affection was mutual. He had one burning ambition and that was to see every county, city and town in North Carolina organized into an effective local health unit manned by a competent and experienced health officer; and to see the State Health Department evolve into one of the most efficient in the Nation. A worthy platform for all of us to stand on.

He loved the medical profession and felt that its legitimate interests should always have the same consideration which he gave to the cause of public health. He could not see why any practicing physician should not share his own admiration and loyalty to the public health cause.

We may safely write it down in the records that he was a famous physician, a statesman, a successful business man, an efficient State Health Officer. For me, however, and for the members of our staff and for this group, I am sure that we will remember him always as a sympathizing friend and a fellow worker who always did his best to understand and help us with our problems.

So, in this spirit let us stand and reverently quote the words of Halleck in bidding farewell to our fallen comrade:

> "While Memory bids me (us) weep thee,
> Nor thoughts nor words are free,—
> The grief is fixed too deeply
> That mourns a man like thee."

SCHOOL MEDICAL EXAMINATIONS—A PRACTICAL PROBLEM

By N. Thomas Ennett, M.D.,
Pitt County Health Officer, Greenville, N. C.

(Read before the North Carolina Health Officers Association, Pinehurst, N. C., May 6, 1935)

We here present a simple, practical plan for school medical examinations. It is a plan especially suited to small towns and rural health work where the personnel of the health department is small and the physical facilities for the examinations at the school are very limited. In cities a more elaborate plan is possible.

We will outline, briefly, the plan we have used this spring in our school work in Pitt County.

It is assumed that the health officer has discussed matters with the superintendent of schools and also that he, the health officer, has explained his program to the principals and teachers at one of their general, county-wide meetings; for the three "stepping-stones" to success in school health work are: the superintendent, the principal and the teacher. Of course, it goes without saying that the superintendent is the key person, for the principal takes his cue from the superintendent, and the teacher, in turn, takes hers from the principal. Coöperation all down the line is essential if your work is to be a success.

On account of so many variable factors, such as the size of the health department personnel, the school facilities, etc., the technic of school medical examinations has not been standardized—therefore each examiner is thrown on his own resources and must work out a plan for himself. In fact, even the scope or extent of the examination itself is likewise non-standardized except that the State Board of Health provides an excellent physical examination card suggesting that the examination cover certain points or items. All of you, I am sure, are familiar with the content of this card.

As a first step, the health officer must decide the grades he will examine, the frequency and scope of the examination and just what part of the examination he, himself, will do, and what part can safely be delegated to the nurse.

Before going to the school it is understood that the medical cards have been distributed ahead of time to the teacher and that the teacher has filled them out as to immunizations, communicable disease history, etc., and has weighed and measured the children. When you go to the school, having previously notified the principal of your coming, find the principal and have him, if he, himself, is not teaching, to escort you to the classroom. This further paves the way for teacher coöperation.

On account of few schools having an extra room of sufficient size for medical inspection, it is usually necessary that the doctor and nurse work in the classroom. Unless you have had experience in working the classroom while the class is in the room, you are apt to feel that even measurably satisfactory work is impossible. But you are mistaken. With an explanation to the children of what you are trying to do, the room can be brought to reasonable quiet and kept so.

The scope of my examination covers the following points: eyes, ears, nose, throat, teeth, skin, scalp, posture and nutrition. Vaccination for smallpox is also done. Suspected cases of feeble-mindedness are, by a few questions, given a cursory mental test and discussed with the teacher. Heart and lung examinations are made only where indicated, for instance, where there is a chronic cough or shortness of breath, etc.

The nurse's part in the examination is to test vision, make oral inspection, unless there is a dentist employed, inspect the scalp and to calculate the percentage of deviation from the standard normal weight in case the teacher has not done this already.

This leaves for the health officer the following points: ears, nose, throat, skin, posture or orthopedics and the estimation of nutrition. He also checks the vision in cases recorded by the nurse as abnormal. Of course, more important than the visual test, itself, is the matter of subjective symptoms, such as headaches, blurred vision, etc.

In attempting to discover as to whether eye strain exists, it is a good plan not to ask the child such leading questions as "do your letters get mixed up or eyes smart and burn when you read, or do you have frequent headaches?" If you resort to such questions, they should be limited to the older child, one mature enough to resist the power of suggestion. I usually ask the child, "If your eyes bother you, in what way do they give you trouble?" In addition, I ask, "Have you ever complained to any one at home about your eyes, and if so, what did they say?"

There are many instances in which you suspect eye strain, but in which it is most difficult to determine as to whether or not the defect is sufficient to justify you in putting the family, which may be a poor family, to the expense of an eye examination or a refraction. (Perhaps here is a good place for me to caution you, that the most important factor in securing and maintaining the respect of the local physician and the citizens in general for the school health work is, that the *defect* for which treatment is advised, *actually exists.*)

The ear examination or testing for impaired hearing is probably the least accurate and most unsatisfactory of all the points in the school examination. While we test all children's eyes, we make no attempt at testing all children's ears. Of course, if we had a Western Electric 4A Audiometer, it would be practical to test all children, 40 being tested at one time, or if we had an absolutely quiet examining room, we would be justified in taking the time to test all children for unsuspected deafness.

In an effort at rapid screening for impaired hearing, we ask the teacher if she has a child whom she thinks is hard of hearing and then we ask the children as a group, if there is any one present who has had a discharging or running ear at any time or has been told by mother that she thinks they are hard of hearing.

Out of every hundred children, five to ten will hold up their hands, and upon examination with the watch test or whispered voice, you will probably find two to four children with hearing impaired sufficiently to need treatment. If in the examination of a *thousand* children you recommend treatment for more than five per cent of them, you may feel assured that you have sent some child to the doctor who did not need to go. On the other hand, anything under two per cent means that you have probably overlooked some child who needs treatment.

In the examination of the tonsils and in determining the question of treatment, the size of the tonsils if of little importance compared to the history of tonsillitis, and as a point in the technic of inspecting the throat, I would suggest that you have the child say "ăh" as in add, instead of the conventional "äh" as in far. If this technic is used, it is seldom that a tongue depressor becomes necessary for a satisfactory view of the throat. I scarcely use a tongue depressor once in a hundred examinations—"äh" buckles the tongue—"ăh" flattens it out.

As to adenoids, the symptoms and evidences of this defect, such as mouth breathing, a high, narrow vault, and the typical adenoid face, are too well known to permit further discussion.

The inspection for skin diseases such as scabies, impetigo, etc., and for malnutrition (10% or more underweight) is comparatively simple, and the inspection for postural and other orthopedic defects is made by having the child stand and viewing him front, back and from side to side, and to walk straight in front of us across the room and back. This will reveal the more or less obvious orthopedic defects.

This completes the examination unless a chest examination is indicated.

While the examination here outlined is not the ideal it is essentially adequate if carefully done.

The nurse and the physician each make their own entries on the medical card, but it is always understood that the *only* notices which may go out to the home over the nurse's signature are those advising of dental defects and pediculosis. Notices of all other defects must be over the signature of the health officer. (To have the nurse advise treatment for eyes, ears, adenoids, tonsils, etc., will, where there is a health officer, sooner or later, cause the efficiency of the health department to be questioned.)

Following the examination, the medical cards are returned to the health office where notices of defects are made out and sent to the home, through the school. Notices should be sent out as soon as practical after the examination.

In order that the teacher may, at all times, have available on her desk information as to the defects found by the health officer in her class, a report of the examination is made to her on a *blank especially prepared for this purpose. In this way the child with poor vision and the one hard of hearing will immediately profit by the medical examination, since knowing their defects, the teacher will place them near the front of the room. In addition, with the medical report before her, the teacher will be in a position to coöperate with the health department in having the defects corrected. It is manifest that if all of the follow-up work is to be left for the nurse alone, much of it will go undone.

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*Copy available upon request to author.

In concluding this sketchy outline of our idea of a practical school medical examination, may I express the opinion that every health officer should make school health work one of his main activities. In no other way can he so easily reach so many people or so easily popularize the health department.

Since the practice of preventive medicine is the chief reason for the existence of a health department, and since preventive medicine is based upon health education, is there anything more logical than that we should build up our health program around the school child, the one who, when we quit the scene, is to take up our work and hold high the torch for the next generation?

PITT COUNTY PUBLIC SCHOOLS

REPORT ON MEDICAL INSPECTION WORK BY THE HEALTH DEPARTMENT

.....School, ...Teacher.

Defects or disease found in grade..... room..... date of examination.....

The information on this blank should be of great assistance to the teacher in following up the children who need treatment.

Please seat defective vision or hearing cases near the front of the room.

This blank is to be *returned* to the Health Department, through the principal, at the end of the school term.

Under the head of remarks, among other things, state what efforts you have made to secure treatment.

Name	*Defects or Disease*	*Date home first notified*	*Remarks*

SANITATION

By WARREN H. BOOKER, Director, C.E.,
Division of Sanitary Engineering, State Board of Health

For those of us who sometimes grow weary and perhaps even a bit discouraged with the apparently slow and faltering progress of sanitation, it is sometimes worth while at the close of a busy day or a busy difficult week to pause a few minutes and take stock. To frankly ask ourselves whither are we going and are we going at all, and if so, are we going in the right direction? Or, again, is what I am doing worth while? Is it the very best thing that could be done, or that I could do under the circumstances. How shall I plan my work for the future, under existing cir-

cumstances? These and a half dozen other similar questions about our work and our problems often help us on our way and re-establish our confidence in some things and perhaps more misgivings in other features of what we thought was health work.

One of the most interesting things about this work of ours—this sanitary work, is that it changes. It changes not only continuously, but sometimes rapidly and violently. We have a vexing sanitary problem on one front today, and tomorrow we lick it or it is gone and two other sanitary problems take its place.

Take, for example, flies. Twenty or twenty-five years ago at meetings like this we would be found discussing flies and the fly menace. Entomologists were working and experimenting with and writing about the story of the fly—the ordinary house fly. One of our North Carolina Health Departments, that of the City of Asheville, pioneered in anti-fly work and led the South, if indeed not the entire Nation, in original fly investigation work and control measures against flies. Dr. L. O. Howard of the Federal Bureau of Entomology, Washington, wrote a book that became the textbook for sanitarians on flies. We all knew about the fly eggs, larvae, pupa and the full grown flies and how two adult flies at the beginning of the season, by dint of industry, perseverance, good family management, and perfect breeding conditions could by the end of the summer season be the proud progenitors, not of quintuplets, or anything so mild as that, but the number runs up into stupendous billions and trillions—enough to cover the surface of the earth to surprising depths. We health workers made the fly wade across the agar in a Petri disk, incubated his tracks and proved our point. Then the discussion turned to ways and means. Ways and means of exterminating the fly. Yes, we were going to exterminate the fly. We were not content with mere control, we were all for extermination. Some of us young, ambitious and energetic novices discussed everything from clean-up campaigns to poison from screens and swatters to traps and tanglefoot. Gradually the fly fad passed as hookworm, and typhoid attracted more attention and lo and behold, somewhere during the last ten or fifteen years our fly problem largely disappeared in our municipalities at least, and the surprising thing to me is that so few of us give the automobile proper credit for licking the fly problem for us, or at least controlling it to a very large extent.

Some twenty years prior to the swat-the-fly fad, much time, even in national meetings of public health workers was devoted to safe handling of the dead, the embalming and transportation of dead bodies. Now such matters rarely interest health workers.

Milk sanitation is one phase of sanitation in which we are all interested now and in which we have made very rapid strides and can readily go much farther. On an average there are about 40 milk borne epidemics a year in this country. These epidemics range from a few cases up to great epidemics the size of the one at Montreat, involving over 5,000 cases of typhoid with over 500 deaths.

Milk sanitation is not only important in itself but it is rather unique in other ways.

It is unique in that the Health Officer has indirectly a tremendous lot to do with the dairyman's financial success through the grade given to the milk the dairyman sells. Of course, in the final analysis the dairyman sets his own grade. Milk sanitation is unique in that the dairyman's customers, i.e., the general public are with the health officer and against the dairyman in practically every case. Milk sanitation is rather unique in that the low grade dairyman is his own worst enemy and the health officer, by encouraging him to clean up and bring his product up to meet certain definite standards of sanitation and cleanliness, automatically increases the sale of milk. This in turn is just what the health officer wants because the health officer is also anxious to see more milk used for nutritional reasons and nothing promotes the use of more milk and dairy products like *clean* milk and dairy products in which the general public has confidence.

Finally milk sanitation is unique because of the manner in which it is administered. The U. S. Public Health Service writes the minimum requirements in the form of an ordinance. The individual municipalities and counties adopt the ordinance and enforce it. The State Board of Health acts in an advisory capacity and assists and coördinates the work of the local health departments. Once a year the State Board of Health endeavors to make an annual municipal milk rating which is tabulated and forwarded to the Public Health Service for ratings and comparisons with the work of other cities and towns and with other states. The Public Health Service has even established an arbitrary standard and gives special preference to those towns in those states that make above a certain rating. That rating is 90% at present. We have been pleased to refer to those towns making 90% or more as the honor roll towns and we believe it to be a very good name.

Now naturally the health officer in one town will not relish having his town off the honor roll while certain neighboring towns are on the honor roll, and naturally those in charge of milk sanitation at the North Carolina State Board of Health are not going to let State Board of Health in South Carolina or Virginia have any more towns on their honor roll than we have on ours. It is a wonderful game and it is working out nicely.

Unfortunately, in the past, in a few instances, the dairymen in some towns were permitted to advertise a much higher grade of milk than they really were entitled to have. This, of course, became embarrassing when it became necessary to point out to a dairyman that he was over-graded, that he really had no complaint at all at our threat of degrading for the reason that he had been masquerading under too high a rating all the time and all that was necessary was to bring his milk up to the required grade and degrading would be unnecessary.

Then too the local health department can point out that the requirements of the ordinance do not weigh any heavier with one dairyman than

with another. No discrimination is shown. That by having the sanitation uniform that all dairymen have an equal opportunity to pass on to the final consumer a uniform charge for the slight additional cost of producing a clean, safe, high grade milk over a dirty or potentially dangerous milk supply. It should be borne in mind that the production of clean safe milk does cost more than barnyard milk to produce and for that reason a sanitarian is discriminating against his best dairies if he permits off-grade milk men to compete with him on the same basis of grade. The local health department can point out that it is necessary to enforce the ordinance primarily for public health reasons, and secondarily because this town will be rated on the manner and the efficiency with which this Public Health Service milk ordinance is carried out along with over 500 other cities and towns throughout the country, and no dairyman will readily admit that the quality of his milk when rated by national standards is second to the average milk supply of any other town. Finally it is important to point out that the cleaner and safer a milk supply is, the more may be sold.

In undertaking a reasonable milk sanitation program, it was soon found that dairymen were willing and anxious to coöperate with the health departments if only they could be shown very definitely what was wanted. To that end your State Board of Health proceeded to design several typical milk houses, dairy barns, sterilizers, and other dairy appurtenances. I am glad to say that in a great many cases new dairy construction throughout the State follows very closely these suggested plans.

The trend in North Carolina is moving more than ever toward pasteurized milk. Since July 1, 1934, less than a year ago, the State Board of Health has designed or assisted with the design, plans, and general layout of over 25 new or remodeled pasteurizing plants in the State. Plans for a new pasteurizing plant went out of the office for Oxford last week, and one will go out for remodeling an old plant at Greensboro this week.

Gentlemen, progress in dairy sanitation is being made in this State and it is being made by leaps and bounds. I wish to pay my respects to the various health departments, not only those represented here, but others as well, for the splendid part you and they have had in this advancement.

You will be interested to know that North Carolina now leads the rest of the States operating under the Public Health Service Milk Ordinance in the number of cities and towns on the honor roll. We now have 30 cities and towns on the honor roll. The next runner-up, I believe, is Texas, with 18, and Mississippi, with 17.

Not only that, but North Carolina has more milk ordinance towns than any other state in the Union, except Texas, and we have nearly as many ordinance towns as Texas, with less than half the number of towns of sufficient size to have such an ordinance.

As an illustration of how rapidly a sanitary feature may change, it is only necessary to refer to our State prison camps. Four years ago North

Carolina had perhaps one of the worst set of State and county prison camps to be found anywhere. The Legislature of 1931 combined the prison department with the Highway Commission, calling it the State Highway and Public Works Commission.

One of that Commission's first acts was to start designs for a standard 75 and 100 man prison camps, and to request the State Board of Health to outline the necessary sanitary features for such camps. You are all familiar with these camps. You have seen their simple rugged plumbing features that replaced the old buckets or night pails. You recall the showers, drinking fountains, and running water that replaced the old water bucket, and perhaps a common drinking cup or dipper. You have seen nicely screened kitchens and dining rooms, their safe wells and water supply, and their sewage treatment plants. Whereas before it seemed impossible to even make a start in prison sanitation, now this matter headed up under one central, responsible, capable head, it is readily possible to get what was needed in prison sanitation in just a few years.

The matter of school sanitation bids fair to follow the same course some day. True, under Federal work relief agencies some school privies were built and in a few counties some running water and sewerage were installed at our schools, but in view of the serious deterioration during the past five or six years of depression, it is doubtful if the condition of our school sanitation is as good now as it was in 1929 and 1930 where a sanitary school survey made in 76 counties indicated that about one-third of our schools had no school water supplies on the school grounds whatsoever. Slightly more than one-third had water supplies of doubtful quality and slightly less than one-third had what you and I would call reasonably safe drinking water supplies.

Excreta disposal at our schools is even worse. The statistics are a matter of record and common knowledge to this audience, and I need not tresspass on your time.

Suffice it to say that there is now pending before our Legislature a bill which if passed should be the means of correcting one of the greatest continuing crimes against North Carolina childhood that you and I have ever witnessed—the crime of the sovereign State of North Carolina compelling thousands of little children to go to school eight months in the year without the bare necessities of a safe drinking water or a sanitary means of excreta disposal at those State operated schools. Should this bill pass, in my opinion much can be done to improve school sanitation. If the bill does not become a law this week, it is possible that some future administration may see the wisdom of the State's taking over our physical school plants exactly as they took over the operation of the schools four years ago, and exactly as the State took over the State Highway system some 16 years ago, and later the county roads, and still later the prison campus. In every case the State has operated these additional functions far better than they were operated before. It is my opinion and earnest hope and

prayer that we are headed for a system of State schools with the State building, maintaining and operating our schools properties as the State now builds, maintains, and operates its highways, roads, and prison camps, and then by the grace of God may our children be given a square deal with sanitation at least equal to that now accorded our criminals.

As pointed out at the beginning, and all through this paper, the means and methods of sanitation are in a rather violent state of change. In fact, they may be said to be in a state of flux. In my opinion, within the past year or 18 months we have seen more Federal aids and encouragements to sanitation and public health than ever before in our history, and the end is not yet. We have not only seen government paid men go on to private property and build privies and drain swamps, but we have seen Federal provision for encouraging the construction of municipal water works, sewer systems, and sewage treatment plants to the extent of offering to give 30% of the cost of the labor and materials as an outright gift and buy 4% bonds at par for the remainder of the cost when many of these municipalities could not have sold 6% bonds at 75.

Not only has this been done, but we are getting ready as rapidly as possible to do it again, as well as quite a bit more. Within the near future announcement is expected of a new PWA or similar authority or administration. But even before this, we as sanitarians and health workers should have been promoting and encouraging projects for extending running water and sewerage so as to make it available to 100% or practically 100% of the residents of our cities and towns that now have water works. As for the small town and village, I don't think any place of over 200 to 300 population should be without a public water supply and sewers. We have towns of less than half that population with public water supplies already. Let's talk it up and get rid of a lot of dangerous open top wells and insanitary privies. Have fire protection, if it is desired, and if the folks want to pay for fire protection, but at least have running water for drinking and domestic purposes. Here is one of the greatest opportunities for doing real constructive sanitation and health work that has come our way for many a day.

Nor is that all. Through Title I of the National Housing Act householders everywhere have been and are being encouraged to improve their homes in small amounts ranging from $100 to $2,000. At first I did not think much of this. It did not occur to me that it would ever amount to much. But just look around at the new paint jobs, the new roofs, the repair jobs going on everywhere with the installation of a few bath rooms, a few sewer connections. Gentlemen, there is another golden opportunity. Why wouldn't this be the time for that compulsory sewer ordinance? Why not a concerted drive by our sanitarians, nurses, and others to encourage as many sanitary improvements at our homes as possible?

And then there is the dairyman. If he needs a new milk room, a well, a sterilizer, or other equipment, here is his chance. The owner should

finance it if he can. If he cannot, arrangements can be made to finance it at the rate of $5.00 discount on the $100 for a year payable monthly.

More recently Title II of the National Housing Act is becoming effective. This is intended to encourage the construction of better housing for the middle classes. This will include loans for amounts up to $16,000 for periods of time up to 20 years. We as sanitarians and health workers should at least lend our moral support to such projects because better housing means better sanitation.

Just what other projects and activities of interest to sanitarians and health officers may be contained in that $4,880,000,000 work relief bill remains to be seen. Should it develop that there is a possibility to construct pit privies at private residences, let's encourage it. Should it take a turn for school sanitation, anti-mosquito, drainage, swimming pools, or whatever turn it takes it will certainly be good sanitation and good business on our part to push it and get all out of it possible.

Here is another suggestion: Rural electrification is coming rapidly to the forefront. No one can tell how far this effort may lead. The possibility of getting electric energy into rural districts is indeed inspiring to every health worker. Of course, with the coming of elecrticity, electric lights are first installed. Certainly electric lights are an improvement and an advance so far as the eyes are concerned over kerosene lamps. But electricity for power and the pumping of water is very cheap. When a motor driven pump is installed the well top must at least be closed to provide a foundation for the motor and pump. With running water in the home will come the bath room and sewerage, and the old privy will be replaced by the septic tank. In addition there will be an increased use of electric refrigeration, the use of electric fans, and other sanitary conveniences. The active sanitarian will not only welcome rural electrification, but he will do everything he can to promote electricity in rural areas.

From these random remarks it would seem that the sanitarians function today has expanded from swatting flies or worrying about the safe disposal of the dead to one of the broadest, most active fields he could possibly desire. There are more wonderful opportunities and possibilities for real worth-while health work right now than this generation of health workers have ever seen before. The problem is to get the utmost out of the possibilities that are expanding before us every day. "Truly the harvest is great, but the laborers are few" and I might add—underpaid.

THE LABORATORY IN THE PUBLIC HEALTH PROGRAM

By John H. Hamilton, M.D.,
Director State Laboratory of Hygiene, Raleigh, N. C.

All of us realize that modern preventive medicine had its genesis in the laboratory. It was only the work of such men as Pasteur, Koch, Von Behring, and Park that make possible our scientific approach to disease control. Although many refinements have been made in procedure since

the days of Jenner and Pasteur, the laboratory still plays an important part in our public health program.

In North Carolina, the State Laboratory of Hygiene was authorized by the General Assembly of 1907 for the purpose, primarily, of making examinations of public water supplies. In December of that year, Dr. Clarence A. Shore became director of the Laboratory and guided its destinies with an intelligent and unselfish loyalty for more than 25 years.

Prior to 1920, the State Laboratory of Hygiene provided most of the protection which was afforded the people of the State from contaminated waters. Each year the Laboratory examines between five and six thousand specimens of water. Most of these analyses are of specimens from municipal and other public supplies. Today many specimens are received from private water supplies, some of which any intelligent observer could adjudge unsafe on sanitary inspection of the source. The only service which the Laboratory should be called upon to render in this field of endeavor is to detect those sources of contamination which might operate beyond the range of trained vision. If we are to conserve our facilities, we must not dissipate them by unnecessary work. A health officer should have enough courage to declare certain sources of water to be dangerous and should be able to command enough respect in his community to convince the parties concerned that he knows whereof he speaks. Not infrequently a single sample from a dangerous supply will show no evidence of contamination. A report based on this examination will only give a false sense of security.

Sputum examinations once played a very important part in the diagnosis of tuberculosis. Today few physicians would be content to wait until their patients had developed open tuberculosis before making a diagnosis. Although the use of the tuberculin test and X-ray examinations have proved far superior to sputum examinations as an aid to diagnosis, this work of the Laboratory has continued to grow. In all probability, many of the specimens which we receive now are either for the purpose of determining the progress of the disease or for locating spreaders.

As aids in the diagnosis of typhoid fever our Laboratory offers blood culture and Widal tests. The specimen container for this purpose is preferably the same as for the Wasserman test. Tubes should be well filled so that we will have a sufficient supply of serum and a clot of reasonable size. On all specimens sent for this purpose, the clots are cultured immediately and the serum tested for the presence of agglutinins. A positive blood culture is almost indisputable evidence that the patient has typhoid fever. A positive agglutination test may be due to typhoid vaccine or to a previous attack of typhoid fever.

The chief value of cultures of urine and feces is in determining when a person with typhoid fever has ceased to become infectious. Unfortunately, on some of our patients no diagnosis is made until the organisms are being excreted. Bacillary dysentery can best be identified by cultures of feces.

The examination of throat swabs for diphtheria has declined. I prefer to believe that we in North Carolina are depending upon laboratory service for the diagnosis and release of diphtheria just as much today as we were ten years ago. To justify our belief, we must assume that these examinations are now being made in local laboratories rather than by the State Laboratory. Certainly it would be unfortunate if we grew careless and unscientific in our methods of controlling this grave disease.

In 1928, the Laboratory began the making of macroscopic agglutination tests for undulant fever. The number of requests for this test have increased markedly; in 1934 there were more than two thousand. In 1930, there were ten distinctly positive tests; in 1931, thirty; 1932, twenty-nine; 1933, forty-seven; 1934, sixteen. Since for each patient with undulant fever, two or more tests are usually made, the Laboratory records would indicate that the incidence of this disease is low in North Carolina.

The Weil-Felix reaction for endemic typhus and Rocky Mountain spotted fever was started in our Laboratory in August, 1928. Its increase is approximately the same as the test for undulant fever, since both tests are indicated in patients with fever which is not readily diagnosed clinically. In 1934, 1,944 such tests were performed. In 1931, there were two positives; in 1932, there were five; in 1933, forty-one; in 1934, fifteen. Although this test is admittedly a non-specific agglutination test, with the B. proteus X-19 as the antigen, it is uniformly positive in practically all patients with either endemic typhus or Rocky Mountain spotted fever. Agglutinins generally appear in significant dilutions during the latter part of the first week of the disease and increase rapidly for the next week or ten days. Usually they decline just as rapidly. Therefore, for the test to be most helpful, two specimens should be submitted, the second during the latter part of the second week or the first of the third week after the onset of the disease.

Feces examinations for intestinal parasites were performed by the Laboratory during the early days of the hookworm survey in this State, the Laboratory staff frequently working far into the night in order to assist in this valuable work. During the 1920's many health workers apparently felt that this public health problem had been solved. During the past two years, however, we have come to the realization that infestation with intestinal parasites is much more prevalent than we were formerly willing to admit. During the year 1934, the Laboratory examined 7,160 specimens, 865 of which were positive for some intestinal parasite. Hookworm infestation accounted for most of these positives, although a considerable proportion of the specimens showed the presence of ascaris, with a wide variety of other parasites being represented.

Vincent's angina examinations, begun in the Laboratory in 1924, have increased markedly. In 1934, there were 6,191 requests for this examination. Typical organisms were found in 2,276. Our present knowledge of these findings would not permit us to hazard an opinion as to how many

of these organisms represent virulent strains. It is probable that a very high percentage of individuals without visible pathology harbor organisms that have morphology of the fusiform bacilli and spirilla.

The examination of blood films for malaria have increased considerably since 1931. The personnel of the Laboratory is too limited to permit us to encourage surveys or extensive studies. We are prepared to make only thin film examinations; yet, in 1934, of 1,187 examinations, 122 showed malaria parasites. The increased prevalence and distribution of estivo-autumnal infection is alarming. Although the Laboratory examined the first specimens from the Camden County epidemic, the further investigation in this outbreak was carried on by the U. S. Public Health Service. Our experience during the year 1934 would indicate that we must be increasingly alert if malaria is to be kept in the relatively unimportant position it has occupied during the past several years.

The number of urethral smears for gonorrhea has increased approximately fifty per cent since 1932. Of 3,327 examinations in 1934, 783 showed typical Gram-negative intracellular diplococci. Although this is a smaller number than the 1,074 positive examinations in 1933, we have no reason to believe that gonorrhea is becoming less prevalent.

Wasserman tests have grown in number from 12,519 in 1920 to 74,000 in 1930, to 84,000 in 1933, and 106,000 in 1934. Our Laboratory personnel and equipment is sufficient for only about 75,000 specimens per year. When we attempt to perform more than that, we are practically attempting the impossible, and like all persons endeavoring to accomplish the impossible, we are likely to come to grief. It has been necessary to adopt the regrettable procedure of restricting the number of specimens sent to the Laboratory. We have found it necessary to refuse to send the requested number of specimen containers. We have also found it necessary to discard specimens when the number received was in excess of our maximum facilities.

As an adjunct to our Wasserman test we have been studying precipitation tests for syphilis. It has been decided that the precipitin test best adapted to our Laboratory is the Meinicke Clarification Reaction II. We have performed approximately fifteen thousand tests by this method and are endeavoring to determine its dependability. Its sensitiveness can be accurately adjusted. Its specificity must be evaluated carefully. Many physicians throughout the State have been helpful in supplying us with information which we hope will show the merits of this serological procedure for syphilis. At the present time we can only state that two tests are better than one. Further data on this test will be published in the near future.

We have developed a specimen container which will permit the sending of chancre serum from any part of the State to the Laboratory where as satisfactory Darkfield examination can be made as if the patient were in the Laboratory. Since the successful treatment of syphilis depends in a

large measure upon the promptness with which therapeutic agents can be administered following the initial lesion, we feel that this specimen container, properly and intelligently used, will be of great help to the physicians of the State in their efforts to control this rapidly increasing threat to the human race.

The examination of specimens from food handlers has continued to be most unsatisfactory. Specimens collected as a routine procedure, without adequate evaluation of clinical history, are largely wasted effort. Carriers of pathogenic organisms are seldom discovered as a result of such a procedure. Negative laboratory findings give health officials as well as others a false sense of security. Most carriers dispense their micro-organisms only intermittently. Other individuals may become infected shortly after laboratory examinations are made. If we are to have physicians as health officers, we should utilize their training in epidemiology and clinical diagnosis. A careful history on a potential food handler should reveal the possibility of his having had a continued fever which might be typhoid fever, as well as the detection of other cases of typhoid fever which might be attributed to him. Repeated specimens from a person whose epidemiological history is suggestive would provide much more information than the examination of an equal number of specimens taken at random as a routine procedure. The examination of a thousand specimens taken from two hundred suspected individuals will locate more carriers than a thousand specimens from a thousand individuals routinely applying for food handlers' permits. The Laboratory is not trying to dodge work. Our facilities are limited. We prefer to devote our energies to efforts that will produce results.

Dr. John L. Rice, Health Commissioner of the City of New York, has decided that the routine medical examination of food handlers is illogical and ineffective and has revised his sanitary code accordingly. In commenting upon this policy, Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, states: "I have discussed this matter with my staff and with other medical officers of the Service who have given special attention to this subject. . . It is the unanimous opinion . . . that as ordinarily carried out in practice, the food handler examinations are not of sufficient value to warrant the expense incurred."

Dr. Thomas Parran, New York State Commissioner of Health, commented as follows: "There is no question in our minds but that you are making a wise move in discontinuing the health examination of food handlers. Carried out as a routine on so large a scale it could not possibly be effective and it creates a 'false sense of security.' "

The money and personnel heretofore devoted to this activity will be available for more productive work. In the future, much greater attention will be given to the education of food handlers in personal hygiene and to the entire matter of food sanitation.

The increased prevalence of rabies in the dogs of the State has caused the Laboratory to make many more examinations for this disease. The year

1934 marked an all-time high record for this activity. We frequently hear the statement that all of the brains examined by the Laboratory show evidence of rabies. That this statement is erroneous is apparent to all thinking and observant individuals. In only one year (1921) have there been more brains positive for rabies than those in which no evidence of rabies could be found.

In November, 1932, we discontinued the use of the Rawlings strain of B. typhosus in the preparation of our vaccine, and substituted in its place an organism especially recommended by Dr. Grinnell of the Harvard Medical School. In making this change, Dr. Shore was influenced by two factors: first, Dr. Grinnell had demonstrated fairly conclusively by laboratory methods that the Rawlings strain had lost its ability to produce bacteriacidal and protective substances, and second, that during the previous four or five years we had had several cases of typhoid fever in persons who had recently been vaccinated. Since January, 1933, all the vaccine which has been dispensed by us has been made up with the Grinnell strain. Evidently this vaccine produces a more severe reaction than our old Rawlings strain vaccine did. Although it has not been used long enough to evaluate its protective power, we have received as yet no reports of its failure to give protection. If the reactions from it are sufficient to discourage the use of typhoid vaccine, it might be desirable for us to look for still another organism with which to make our vaccine.

Certainly the reactions which have been reported to us would indicate that accurate dosage is necessary and that it is advisable to use as small a needle as possible. Another precaution is indicated—that of keeping the vaccine cold until just before it is injected. Heat rapidly increases the toxicity of typhoid vaccine without improving in any way its antigenic properties.

On several occasions before his death, Dr. Shore suggested the advisability of discontinuing the preparation and distribution of our pertussis vaccine. On two occasions I have made similar suggestions. In each instance there have been protests from physicians who feel that it does have sufficient value to justify its existence. It is hope that in the near future we may be able to prepare a pertussis vaccine after the method of Sauer and distribute it under such restrictions as would make possible a statistical study of its prophylactic merits.

The use of smallpox vaccine has decreased over a period of years. It does not take a seventh son of a seventh son to forecast that smallpox will become more prevalent in the not distant future.

Antirabic treatments are still prepared by the Laboratory by the Calmette modification of the original Pasteur method. The unprecedented demand for treatments during the year 1934 has continued during the months of 1935. Since 1908, when the Laboratory first began to dispense antirabic treatments, we have distributed more than twenty-two thousand. We have endeavored to compile accurate records concerning the effective-

ness of the treatment as well as of the accidents which are incidental to it. We have only one authentic record of failure of the vaccine to protect, although there have been several patients who developed rabies during the course of treatment. In these instances the persons were either bitten about the head, or there was undue delay in starting the treatment. We have a record of eighteen accidents of antirabic treatment with two deaths. Of the remaining sixteen, only two had residual paralysis of any consequence.

The amount of diphtheria antitoxin distributed by the Laboratory is usually in inverse ratio to the amount of immunizing agents distributed. Diphtheria offers an effective example of a disease for which we cannot avoid expenditure. We must either spend our money for immunization or we will spend it for the therapeutic agent, antitoxin. It will require less money to immunize the children of the State than it will to treat them for the disease.

The immunizing agent which we dispense at present is the alum precipitated diphtheria toxoid. Its effectiveness is far superior to any other product which we have ever distributed. Since it is in an insoluble state, it acts essentially as a foreign body. Therefore, it is advisable that the best aseptic technique be used in its administration; otherwise, we will have an unnecessary number of abscesses. Younger children have no more reaction to the alum toxoid than they had from the Ramon toxoid. Most of the children who have reactions are those that have had previous experience with the diphtheria bacillus. If it is deemed advisable to immunize children over six years of age, we urge that all such candidates for immunization be given the Schick test. Those who have negative Schick tests constitute the principal group that would have a reaction if they were given the alum toxoid.

We have recently changed our Schick test outfit to a toxin diluted in a buffered peptone solution in the hope that we may have more dependable tests with a more convenient test outfit. If our present preparation is unsatisfactory we will endeavor to find one which meets all the requirements of convenience and dependability.

Tetanus antitoxin, as distributed by the Laboratory, is for the sole purpose of protecting human beings from this disease. It should not be used for the treatment of horses and mules. Our principal objective is to supply prophylactic doses. We feel that the trerapeutic tetanus antitoxin should be supplied by commercial manufacturers.

To our antisyphilitic preparations we have added a bismuth solution which we hope will aid in the more effective treatment of this disease, since it is only by the treatment of syphilis in the infectious stage in those individuals in the sexually active age group that we can expect to make any progress in controlling syphilis.

There are many laboratory procedures that can be best conducted in local laboratories. It is, therefore, desirable that every encouragement

possible be offered to the development of qualified laboratories throughout the State. It is hoped that the State Laboratory of Hygiene may be able to assist with the distribution of certain media, stains, antigens, and reagents at approximately the cost of production, and, therefore, assist in making possible a better quality of service which is much more readily available to the various communities of the State.

Much progress has been made in the past; much remains to be done in the future. There will probably never be a time when we can afford to be careless or extravagant in the use of our laboratory facilities. Intelligent discrimination in deciding what specimens should be examined by the Laboratory, what procedures should be followed, what products should be used, and when and to whom they are to be given, will materially improve the quality of service that is possible for the people of North Carolina to receive. Laboratory facilities, properly utilized, can assist materially in promoting the cause of Public Health in North Carolina.

THE VALUE OF THE PREVENTORIUM IN A TUBERCULOSIS CONTROL PROGRAM

By Dr. D. G. Caldwell, Concord, N. C.

For the past half century, tuberculosis control programs have been based upon two elements, (1) control of the carrier, and (2) education of the public.

It is difficult to control the carrier because the disease is frequently of long standing before diagnosis, and because case-finding and follow-up work have never reached any degree of perfection. Many missed and undiagnosed cases are the sources whence tuberculosis is transmitted to other members of the family and community.

For this reason, it has long been the policy of public health workers to bend every effort toward the dissemination of knowledge in regard to the control of tuberculosis and to accent the preventive phase of the work. During more recent years, our knowledge of early tuberculosis in children has given us a new approach to the problem, and offers us a means of supplementing the measures which have been used in the past.

The search for tuberculosis among apparently healthy children is valuable both for the welfare of the child and for the protection of the public health. Naturally, when a child is found to be infected, an investigation is begun to determine whether this child is living with an open adult case of tuberculosis. If this is found to be true, measures are taken to break this contact and obviously a great service is rendered the child. Also, a hitherto unrecognized case has been discovered and it becomes our obligation to isolate the patient or place him in an institution, thereby removing a menace from the entire community.

During the fall and winter of 1926 and 1927, through the coöperation of Dr. P. P. McCain of the State Sanatorium, the first children's clinic in

North Carolina was held in Cabarrus County. At this time over three hundred children were examined and X-rayed. We have no record of the number skin-tested. Of the number X-rayed, twenty were found to have an involvement of the tracheo-bronchial glands. Fifteen of the twenty were sent to the State Sanatorium shortly after the clinic for treatment. Some of those who were sent to the Sanatorium remained the full time necessary for a cure, but there were a number who did not stay long enough to derive the necessary benefits. It then became apparent that sending the children so far away from home for treatment was a most serious drawback. For this reason, we considered the feasibility of taking care of these children in a camp or preventorium located within our own county. Accordingly, in the fall of 1928, it was decided to establish in Cabarrus County what is now known as the Sunderland-Montgomery Preventorium, to operate during the summer months of 1929.

The Preventorium was sponsored by the County Tuberculosis Association and the County Health Department. Coöperating agencies were the Red Cross, Rotary Club, Woman's Club, local churches and fraternal organizations. The building was loaned by the Northern Presbyterian Mission Board—an old school no longer used.

We usually open the Preventorium early in June and operate for three months. It is equipped to care for thirty children. Those selected are contacts to an open case of tuberculosis and have been previously X-rayed to make certain that they have no active trouble. Also, before admitting any child, we insist that other physical defects such as diseased tonsils or carious teeth be corrected.

The routine treatment of the children in the Preventorium is practically the same as that of the State Sanatorium—nourishing food, sunbaths, rest periods, and supervised play. We try to establish good health habits in the child and to educate the parents in the simple routine necessary, so that it may be continued after the child leaves the Preventorium.

These children are given much follow-up work by the local tuberculosis nurse during the school year. They are weighed frequently, and parents are urged to keep a close supervision over their health. In instances where there is an active case of tuberculosis in the home, we try to help the parents isolate the patient and whenever possible have this case admitted to the State Sanatorium. It is in this connection that the urgent need of a county sanartorium is felt. Many more open cases could be removed from contact with the children and other members of the family,—for after all the control of tuberculosis is not altogether an individual problems,—it is a family problem. The household, not the individual, is the unit. We feel that the Preventorium is but the first step in educating the public to the vital need of a county tuberculosis sanatorium, where all active cases can be segregated and no longer be a menace to the communities in which they live.

In our county, Miss Naomi Moore, the Tuberculosis Association's nurse, has charge of the Preventorium, employing help and keeping a general supervision of the institution. Most of the expenses of the Preventorium are borne by the local Tuberculosis Association, with the salary of one nurse paid by the Red Cross. Also, last summer we received some assistance from FERA funds. The cost of operation has varied somewhat from year to year, but the average has been about thirty cents per day per child. This, however, does not include the salary of the supervising nurse or the Red Cross nurse.

In the fall and winter of 1930 and 1931, through the coöperation of the State Sanatorium, another large children's clinic was held in Cabarrus County, going into all of the white and four of the colored schools. A total of 3,786 white and 734 negro children were tested. Of this number, 315 white children and 119 colored children reacted to the skin test, making a total of 434 reactors. It is interesting to note that there were 4.26% white reactors, while the colored showed 16% reactors. There were 70 white children diagnosed with childhood tuberculosis out of 285 X-rayed, and 29 colored out of 102 X-rayed.

We realized that something should be done for our colored children who had definite trouble and we began to look for a suitable place to try out a summer camp or preventorium for these children.

We finally secured the use of a colored school building and, by borrowing and improvising, it was equipped to care for fifteen of the colored children during the summer vacation. Two colored teachers were in charge of this group. The same routine was adopted as that used for the white children, and during their nine weeks' stay in the Preventorium these colored children made an average gain in weight of 5.3 pounds.

A committee was formed among the colored people of the county to sponsor the colored Preventorium and to undertake the financing of the project. Excellent work was done by this group, and much interest aroused among the colored people. It is hoped that this demonstration will have far-reacing results in controlling tuberculosis among the negroes.

The question has frequently been asked, "How much good does treatment at a preventorium or summer camp for three months do in preventing tuberculosis or in curing the child who has the tracheo-bronchial type of infection?" Our reply is that we do not expect a camp of this type to cure or arrest all these cases, but our records indicate that the children have all shown a marked improvement in general health as well as an average gain in weight of about four pounds during their three months' stay in the institution. Also, we hope that the interest and support enlisted in this undertaking will eventually enable us to operate for twelve months of the year. We call the camp a "Preventorium" in order to put something definite before the public and to instill the idea that it is not just a "summer camp" but the forerunner of a permanent institution such as a sanatorium or preventorium, operated the year round. We also stress the fact that during the three months' treatment the child as well as the parents is

trained in proper health habits and taught how to protect himself from any possible re-infection.

In this connection, I should like to call attention to the use of the tuberculin skin test as a great aid in demonstrating to the parent the evidence of infection in the child. To quote Dr. P. P. McCain of the State Sanatorium, "Many who would otherwise scoff at any suggestion that their children need to be examined will be sufficiently alarmed over a positive tuberculin test to want a most thorough examination made and to have it repeated as often as necessary."

In summarizing the value of a preventorium in a county tuberculosis program, the following facts are brought out:

(1) The purpose of the Preventorium is to build up and strengthen children who have been exposed to tuberculosis. It is not intended to take the place of a sanatorium, and children who are suffering from any active trouble cannot be admitted.

(2) It is sometimes impossible to build up a child sufficiently in two or three months, and for this reason it is often necessary to take some of the children for several reasons.

(3) One very definite objective for an institution such as the Preventorium is to establish the right kind of health habits in the child. The children, during their stay at the Preventorium, are taught the value of a balanced diet and regular meals, as well as the advantages of proper play and rest periods.

(4) The Preventorium is an instrument through which the interest of parents is aroused, and offers us a means through which proper measures to prevent the spread of tuberculosis can be taught in a practical way.

(5) The Preventorium offers health officials a valuable method by which our whole tuberculosis control program can be brought before the public. The interest aroused by these underprivileged children focuses attention on the work at large and we hope eventually to arouse enough enthusiasm to round out our program by the establishment of a full-time county sanatorium. Finally, the Preventorium gives us something concrete and definite to put before the various clubs and organizations, as well as the county officials, whose interest and coöperation is so vitally necessary to the success of any health program.

A WELL-ROUNDED PUBLIC HEALTH NURSING PROGRAM

By Miss McIver, U.S.P.H.

As public health nursing represents only one phase of a unified program in the public health organization, it is necessary to consider it from the standpoint of the whole program which revolves primarily around the child.

A few years ago we accepted, as a nation, certain ideals toward which to strive for every child, as his inalienable right. May I review here, those ideals condensed into what we accepted as "The Child's Bill of Rights," which is as follows:

"The ideal toward which we should strive is that there shall be no child in America:

> That has not been born under proper conditions.
> That does not live in hygienic surroundings.
> That ever suffers from undernourishment.
> That does not have prompt and efficient medical attention and inspection.
> That does not receive primary instruction in the elements of hygiene and good health.
> That has not the complete birthright of a sound mind in a sound body.
> That has not the encouragement to express in fullest measure the spirit within, which is the final endowment of every human being."

Opportunity for children to be born with a fair chance for a sound mind in a sound body presupposes the planned family, and the necessity for parents to see to it that their own bodies are in healthful condition before conception takes place.

MATERNITY SERVICE

In order to do her full share in helping to make possible to every child his birthright, and to help lower our country's unenviable record in maternal mortality, the public health nurse should attempt to locate all prenatal cases, and to make sure that every expectant mother, if at all possible, places herself under medical supervision early in pregnancy. She will, if desired by the family physician, make regular monthly visits to such patients, doing simple urinalysis and taking blood pressure, and will report promptly to him after each visit. She will instruct the expectant mother in food requirements, personal hygiene of pregnancy, preparation for delivery, and the necessity for a physical examination and check-up by her physician six weeks after delivery, in line with advice of the physician in charge of the case. She will place in the patient's hands helpful literature furnished by the state and federal health agencies, and urge her to study it. If the public health nurse, by such service, can assist in making safer and more convenient conditions for delivery, she will have rendered valuable aid, not only to the mothers and families of her territory, but also to the practicing physicians as well.

MIDWIVES

It usually falls to the lot of the public health nurses of the organization to locate and supervise, to some extent, the midwives of the territory which they service. This involves, so long as we must have midwives, some instruction to help make them less unsafe in their practice of obstetrics. Group-teaching and maternal hygiene instruction will help to eliminate such practice in time, because the expectant mother, intelligently informed concerning her condition and needs, will make much greater effort to see

her family physician. Let us hope that the combined efforts of the medical profession and public health workers may soon result in better safeguards, and more adequate care for the mothers and babies of rural areas.

PRE-SCHOOL SERVICE

She will teach mothers the value of, and necessity for, medical supervision of the child from birth through the pre-school period by the family physician, or if unable to pay for such services, through periodic visits to a child health conference, or clinic.

She will give instruction, through home-visits and group-teaching in: "child care and feeding, with emphasis on breast-feeding," "communicable disease control methods," "importance of birth registration," "importance of early correction of existing physical defects."

SCHOOL HEALTH PROGRAM

In order to save the time of the busy health officer, or the school medical inspector, the public health nurse usually makes the preliminary arrangements with the principals and teachers of the schools for the physical inspection of the school children; assists the physician at the time of examination; prepares the notification slips for the parents of the children found to have defects, suggesting that the children be taken, with the notification slip, to the family physician, or dentist, or both; makes preliminary arrangements for immunity tests and immunization clinics, and assists the health officer in such clinics; makes follow-up visits to the homes of the children to stress, with the parents, the advisability of early correction of defects, and to urge protection from communicable diseases through known immunizing agents. She organizes "Health Clubs" and "Big Sister Leagues" in the upper grades and in high schools, and where there is no physical education instructor, she teaches and demonstrates "setting-up" and "correctional" exercises, "deep-breathing," etc., for development of good posture, better nutrition, etc.

In counties having a limited health department personnel, the teachers must be greatly depended upon for assistance in carrying on even a minimum health program. We would, therefore, urge that more health education be included in the curriculum of the schools for teacher-training.

If warm noon lunches have not already been arranged for, the public health nurse endeavors to stimulate interest on the part of parents of the children, or through a parent-teacher association, to inaugurate this very necessary provision in meeting growing children's need.

COMMUNICABLE DISEASE CONTROL

To the public health nurse is usually assigned the responsibility for an immediate visit to the home of a patient reported to be suffering from a communicable disease, to instruct the family in nursing procedures in protective measures; to institute isolation and quarantine where warranted and to follow-up on contacts to prevent further spread of the disease. This

is particularly true of tuberculosis and the social diseases. She also assists the health officer with immunity tests and immunization clinics and prepares careful records and reports on such activities.

ORTHOPEDIC

The public health nurse is on the alert, always, to discover the early development of deformity, or a tendency toward deformity; to help bring such cases to the attention of the family, and the family physician, for immediate correction, and to help bring about opportunity for education and vocational training for those permanently handicapped.

INDUSTRIAL NURSING

Industry, increasingly recognizing that healthy, strong-bodied workers mean a larger and better output in business, with fewer problems in administration as well as fewer accidents, are asking for more public health nursing service as a means of increasing health, efficiency and happiness for their industrial families. A public health nurse could well be assigned from the official staff and paid by the industry, or industries, if they should be of the smaller type needing only a part of her time. The advantages of such an arrangement far outweigh the disadvantages.

BEDSIDE CARE

While "bedside care" as such, is generally included only in the public health nursing program of urban centers, there are some rural public health nurses who carry on a limited amount of bedside care for teaching and demonstration purposes. (Explain and illustrate—typhoid case, for instance.)

LOAN CLOSETS

The public health nurse soon finds necessity for the establishment of a loan-closet in various communities to bring sick-room supplies within reach of many people of means too limited to provide the extra linen, utensils, etc., that good care of the sick necessitates. She can usually establish such provision through coöperation of Farm Women's Clubs, Parent-Teacher Associations, Red Cross Chapters, Ladies Aids of churches, or Community Public Health Committees formed as one of the outcomes of her health study classes.

CLINICS AND CONSULTANT HEALTH CENTERS

In a state having a topography such as ours, transportation problems make it difficult, and often impossible, for many of our people to go long distances. It, therefore, becomes advisable to bring clinic and consultant service to them. In the establishment of such centers, either temporary or permanent, the public health nurse is usually assigned the responsibility for organizing the service. She consults with the leaders in the community as to time and place, and prepares an outline of duties of committees to assist her, and to save her time for duties of a more professional nature.

There is no reason why the local group cannot be trained to serve on committees to provide equipment, attend to local publicity, perform the duties of a reception committee or hostess to newcomers or timid persons, serve a lunch when necessary, provide transportation for those who could not come otherwise, and do many other things to save the time and energy of the few professional workers. Besides, they enjoy helping and receive valuable experience and development in doing so.

The members of health study groups constitute interested and valuable helpers for such service, and can be depended upon for regular service, as volunteer workers, in finding and reporting prenatal cases, orthopedic cases, sick children, etc. It is suggested that public health nurses organize their health study classes into "community public health committees," to be called upon as volunteer workers and organizations by the official health groups as need arises.

Such local groups, if correlated, could very well develop naturally into "county public health associations" and county public health associations could very well develop into a "laymen's section" of the State Public Health Association. Representatives from this group, intelligently informed concerning public health problems and needs, could prove a powerful ally in legislative programs for health protection, representing as they would, the populace with the power of the voting-body back home.

GROUP-TEACHING

While no method can quite substitute for the home-visit, and its opportunity for teaching health promotion and disease prevention, there will not, for a long time at least, be enough public health nurses to adequately meet the need for health education through this method. "Group-teaching" offers the next best solution. The public health nurse finds a ready opportunity in reaching a beginning in many places through parent-study groups already organized in Parent-Teacher Associations, and through the Farm Woman's Clubs. Where such organizations do not already exist, the well-trained public health nurse with organizing ability finds little difficulty in forming such groups because women are eager for information concerning the care of children, prenatal care, home care of their sick, personal hygiene and hygiene of the home and community, first aid in common emergencies, and the like, and men are quick to see the advantage of this type of education. Such health study classes can meet in the school, or in the homes of the members, as they may prefer. It is advisable, however, to hold classes on some phases of the work in the home—particularly those concerned with home care of the sick, in order to demonstrate with such equipment as they possess, or can procure, and to teach the use of substitutes for equipment which they cannot afford to buy.

As it is always wise to "lock the barn door *before* the horse is stolen," public health nursing programs include health education in child care and feeding, and personal hygiene for the seventh and eighth grade girls, and

the high school girls through organization of "Big Sister Leagues." "Health Clubs" for students from the fifth grade through high school, offer opportunity to teach personal and community hygiene by practical and attractive methods, and incidentally give valuable preparation for responsibility as citizens to the group which must very soon assume such responsibilities. It will not be necessary to convince citizens thus intelligently informed, concerning the value of health promotion and disease prevention, of the advisability of an annual physical examination, as an economic measure for themselves and their families, and this will increase the family physician's practice from the most satisfactory and constructive angle.

RECORDS

Having learned, both by training and experience, the importance of tabulated facts and figures in showing the status of morbidity and mortality; in revealing the outstanding health needs of the community; the social as well as pathological causes of sickness; in supplying basic material for research and study, and for providing statistical data as a basis for community or legislative action to remedy conditions, the public health nurse keeps complete and up-to-date records in her work, and she does not feel that time spent on records is either unnecessary or wasted effort.

OTHER METHODS FOR CREATING INTELLIGENT PUBLIC OPINION

In carrying on any enterprise, whether it be one of commercial or of professional nature, one of the requisites for success is the creation of an intelligent public opinion. Public health worker's tools for creating such a force in support of health protection and disease prevention are: articles and reports prepared for the public press; talks before groups representing the leadership of communities; announcements prepared for churches, Sunday Schools and movie screens;; radio talks; posters, charts, and graphs; window displays and exhibits. The public health nurse should be prepared to carry her share of such responsibility in her organization.

QUALIFICATIONS

It is obvious that a nurse, in order to render efficient service in such a varied and important program, needs some training in addition to that given in her hospital training-school. The minimum requirements as outlined by the National Organization for Public Health Nursing, and accepted now by most states and nursing organizations are as follows:

a. High school graduation, or its equivalent, as determined by the State Department of Education.

b. Graduation from an accredited school for nurses, connected with a general hospital having a daily average of fifty patients or more. The curriculum should include practical experience in caring for men, women, and children, together with theoretical and practical instruction in medical, surgical, obstetrical and pediatric nursing.

c. State registration.

d. At least six weeks instruction in public health nursing in one of the recognized public health nursing courses, and one year's experience under adequate supervision, or, two years' experience under adequate, supervision, or, a public health nursing course endorsed by the National Organization for Public Health Nursing.

Dr. Livingston Farrand, in the "Foreword" of the "Survey of Public Health Nursing" published in 1934 says: "The part which public health nursing plays, and must play, in any organized effort to improve human vitality under modern conditions is now so obvious that it no longer needs argument. The problem is to increase its effectiveness."

We would, therefore, request that a manual, or hand-book, in line with the "Syllabus of County Health Department Administration" be prepared by our State Health Department for the use of public health nurses, and that a loan library be made available; we would further request that provision be made within the borders of our state, as soon as practicable, for a training course for public health nursing, including in addition to the theoretical instruction, training in a well-developed practice field under the supervision of a competent public health nurse, and that provision be made in connection with such course for two six-week's courses during the summer months. We would also request that two to three day institutes be provided several times during each year, as "refresher courses" for public health nurses, and that these be so arranged as to be brought within a one hundred mile radius of each public health nurse in the State.

INSECTS AND PUBLIC HEALTH

By Roy Norton, M.D., Rocky Mount

Opportunities to learn the prevention, diagnosis and treatment of insect-borne diseases are offered to us almost constantly. Few of us, however, pause long enough in the rush of routine duties to objectively study the "insignificant insect" in our midst. Except for malaria many consider the insect influence to be too far removed and fanciful to merit much serious concern from a public health official. Today the biological transmission of eight or nine serious human diseases and the mechanical transfer of a few dozen more by insects constitute only a part of their influence in human life. In numbers and in weight, insects exceed that of all other animal life combined. These hungry fecund hordes challenge man for every comfort he desires and even his absolute necessities of life. With increasingly rapid transportation, with intense cultivation of domestic plants and animals, and partly because of most of the methods of modern civilized life, the insect competition has become increasingly acute. As man struggles against disease, or for favorable geographical areas, an adequate food supply, clothing, shelter, comfort, or culture, his success or failure depends largely on the help or hindrance offered by insects.

Only a few hundred years ago, men believed that disease was due to the wrath of the gods. Later meteorological disturbances and bad air were

blamed. Men prayed, burned odoriferous concoctions and shut their windows at night—and died. During the last fifty years we have turned from such supposedly omniscient powers as the gods and weather to practical "prosaic matters such as the extermination of the mosquito, the killing of the rat and its fleas and the delousing of the traveler—and we live free from yellow fever, bubonic plague and epidemic typhus."

Theobald Smith, Laveran, Ross, Manson, Carlos Finlay, Reed, and others turned scientific attention to the importance of insects in the transmission of disease to man and his animals and plants. One after another, great districts formerly known as the "white man's grave" have been freed of a particular insect menace and enabled to flourish as only healthy communities could. With active medical efforts directed mainly against mosquitoes, the Panama Canal Zone is one of the most healthful districts in the world while its borders touch upon two of the least healthful.

Insects are responsible for the transmission of several of our worst diseases. Those not carrying diseases now may change habits and do so. Many unsuspected or unproved carriers may later be found guilty. Everything from filtrable viruses, bacteria and rickettsia, to protozoa and parasitic worms may be transferred by insects.

Diseases transmitted by the louse, flea and mosquito alone have turned the tide of war more often than all our generals; the same insects have shaped human destiny more than all our statesmen. In some cases, as in 1632, when Gustavus Adolphus and Wallenstein were at grips, both sides were defeated by insect-borne disease before an actual battle was fought. A million men were kept out of the struggle during the crucial early months of the world war by typhus. The civilizations of Greece and Rome crumbled largely because of insect-borne malaria and that of Yucatan probably because of yellow fever. Who can doubt that the progress of our own Southland has been retarded by mosquitoes and flies? The cultural backwardness of the tropics is due as much to insects as to climate.

Mosquitoes carry malaria, yellow and dengue fevers, and filariasis. Certain biting flies spread African sleeping sickness and tularemia. The common house fly mechanically transmits typhoid, cholera, dysentery, pink eye, smallpox, erysipelas, tuberculosis, and many other diseases. Ticks transfer Rocky Mountain spotted fever, tularemia, African relapsing fever and Texas cattle fever. Bedbugs and related insects transmit tularemia, Indian Kala-azar, European relapsing fever, and South American trypanosomiasis. Lice spread epidemic typhus fever, trench fever, and the relapsing fevers of Algeria, Asia and Europe. Fleas spread bubonic plague, endemic typhus, and possibly other diseases.

Several of these insect-borne diseases are taking a heavy toll in sickness and deaths among us now. Malaria is the worst with its two to four thousand days of disability for each recorded death. Some are of immediate potential danger such as yellow fever, filariasis, dengue, bubonic plague, trench fever and epidemic typhus. Besides malaria, we already

have among us tularemia, Rocky Mountain spotted fever and endemic typhus. We should be alert to study and recognize others now, or soon to be, among us. The progressive physician will need to know more and more about insects to coöperate in the control of insect-borne diseases. Prevention will require the intelligent coöperation of physicians, entomologists, farmers, sportsmen, engineers and practical administrators. In normal times the insect-borne diseases are a threat chiefly to the young, the weak, and the aged but the entire population is in danger when neglect, poverty, famine and war let down the bars of human defense.

One of man's big problems in maintaining health and life is to secure an adequate and balanced food supply. Insects spread disease and destruction among food plants and animals. Probably 90% of the damage done by insects is the result of their feeding or efforts to get food. They eat everything, and take a toll of ten to thirty per cent of every crop that man plants. The food of insects falls into three groups: growing plants, living animals, and the products derived from plants and animals which are stored and used by man for food, clothing, shelter, commerce, arts and trades.

Insects are direct and relentless competitors for nearly every one of man's necessities of life. Man fights consciously, intelligently, and in small numbers; insects attack blindly, instinctively, and in prodigious hordes with limitless reserves. There are fewer than fifty humans per square mile in the United States; experts of the Bureau of Entomology estimate the insect population at 25,000,000 over each square mile of earth surface.

In spite of the uncountable hordes of insects of ten million different species and endless variety of structure, colors, and habits, 99% of those ordinarily encountered can be placed into ten groups, four of which contain 87%:

Coleoptera (sheath-wings)—beetles and weevils, 40%.

Lepidoptera (scaly-winged)—moths and butterflies, 20%.

Hymenoptera (membrane-winged)—ants, bees and wasps, 14%.

Diptera (two-wings)—flies, mosquitoes and gnats, 13%.

Insects may also be classified according to the mouth parts into chewers, stabbers, and suckers, and the use of our chemical insecticides is largely determined by the feeding habits of the particular insect.

Man has certain natural advantages which are the result of intelligence. His tools are not restricted to the appendages of his own body. He makes tools to make other tools. Language, printing, fire, the lever and wheel have added unity and power. Man can use intelligence and study life histories of insects and then attack at the most vulnerable point or points in the cycle. Swatting and screening may be useful in occasional instances. Breeding places are frequently the most vulnerable points in a direct attack on harmful insects. Chemicals, drugs, quarantine, and variation of living habits and crop practices have been found useful in controlling insects.

Unfortunately, many of the present civilization methods favor the increase and spread of insects. Social, philanthropic and medical groups prevent the natural elimination of the misfit and unfit and encourage their rapid propagation while those of best natural equipment are killed and maimed in wars. Rich soil is stripped of vegetation and allowed to wash or blow away. Forests are cut or burned. Our natural allies, the fish and birds, are ruthlessly slaughtered, while flies, mosquitoes, ticks, cockroaches, fleas, beetles, weevils and lice breed unhindered. "So far, man's organized warfare against man, in groups large or small, has constituted his major industry." Fortunately for man, insects also attack each other and are cannibalistic especially when, like man, they seem about to get the upper hand.

Besides having six legs to man's two, insects have certain other advantages. In passing from egg to larva to pupa to adult stages insects are able to feed conveniently and resist the rigors of climatic changes. The greater antiquity of insects, their smaller size, and their rapid successive generations favor greater stability and adaptability. The insect's strong octoskeletal body structure and his respiratory, digestive, excretory and circulatory systems have certain advantages. They reproduce almost unbelievably fast. Powers of concealment or camouflage and rapidity of motion are advantageous to insects.

An interesting and dangerous characteristic of insects is their adaptability for survival in changed and unfavorable environment. Until the clearing of forests, cultivating of crops and domestication of animals, insects were chiefly botanical and biological scavengers. From sucking plant juices, mites, ticks, mosquitoes, lice, and certain flies and bugs changed to sucking blood. Clothes moths began as scavengers of cast off wool and hair in ancient forests. In ten years the many generations of boll weevils became resistant to freezing temperatures. Certain insects have adapted themselves to extreme acids, or alkalies and others to living in old salt mines or petroleum wells. Some insects live in arctic regions and certain forms can live at 121° F. Others can live in water at a depth of 160 fathoms. When the wingless female winter moth was hindered from crawling up tree trunks to foliage above by a poisonous sticky band, the winged male learned in three years to fly with, and deposit her, in the foliage. Should any environmental change exceedingly dangerous to the survival of existing forms of animal life take place, insects could make adaptations hundreds, and in some cases thousands, of times as rapidly as man could. We may as well recognize the hardihood of our competitors.

In the fullness of man's indolence, insects are unconquered. Man's superior intelligence in competition or even in direct attack has not given him all of earth's good things. And the insect can lay claim to doing by blind instinct certain things, which, when accomplished by man, seemingly required intelligence. Among these achievements are flying, paper making, traps to catch food, preserving and storing food, anesthetics, weaving, air-conditioned homes, rocket principle in transportation, incandescent

light, enslavement of their fellows, domestication of animals and plants, and highly organized clans or communities in which workers engage in many diversified special occupations. The insect's inventions of the use of biochemical stimuli in diet, in determining the sex of offspring and polymorphism go deeper into the secrets of nature than our radio or use of tools. The admirably efficient feudal matriarchy of the bee hive is superior to any comparable achievement in general contentment by man. The communistic organization of ants and termites appears to represent the ultimate perfection of modern Russian aspirations.

Insects are, however, by no means unmitigated evils. They destroy weeds, pollenize plants, and serve as scavengers, as makers of soil, as food for poultry and song-birds and food-fishes, as makers of clothing and as suppliers of human food, but especially as destroyers of injurious insects. Man's ingenuity is putting them to new uses almost daily. It is impossible and even undesirable to exterminate all insects; so that we are following our own parasitic inclination and using them. Putting maggots on to clear the debris of an old osteomyelitis is among our later accomplishments.

It is true of insects, as of bacteria, that most forms are helpful to man, but on account of man's ignorance, prejudice, superstition or the insect's appearance, man fails to recognize his friends among the insects and has frequently waged war on spiders, praying mantids, dragonflies, and practically all the ants, bees and wasps. Only within the last few years has man learned that these insects may ally with man in the fight against particularly harmful and destructive insects. The ant is an eternal enemy of the termite. Encouraging the ladybird bug is the best means of controlling San Jose scale and certain wasps are our best preventives of insect ravages in some fruits. Experiments are being carried out to discover other insect allies of man in the fight against our insect enemies, and further progress is hoped for along this line.

One of our disadvantages in this life and death struggle with insects is that "the bug fight cannot be given the pride and pomp of human war. We could not march to it with flags flying and bands playing. And I am afraid there would be no chance for the frenzied profiteering that is so stimulating to patriotism." Man, however, has existed only a million or so years and many insects have existed in their present form for perhaps 100,000,000 years. We should not be too much discouraged by observing such frequent failure to use our recently acquired intelligence. In another million years the outlook for man in his competition with the insect may be much brighter.

ALPHABETICAL LIST OF FELLOWS FOR 1935 WITH POST OFFICE ADDRESSES

Name	*Address*
*Abel, J. F., (Hon.)	Waynesville
Abernathy, H. N., (Hon.)	Charlotte
*Abernethy, Claude O.	Raleigh
Adams, Edw. E.	Murphy
Adams, J. L.	Asheville
*Adams, J. R.	Charlotte
Adams, L. C.	LaGrange
Adams, N. B.	Murphy
Ader, O. L.	Walkertown
*Alexander, G. T.	Thomasville
Alexander, James M.	Statesville
Alexander, Jas. R., (Hon.)	Charlotte
Allan, William	Charlotte
Allen, A. L.	State Hosp., Goldsboro
*Allen, Chas. I.	Wadesboro
*Allen, G. C.	Lumberton
Allen, Jos. A., (Hon.)	New London
Allen, M. H.	Cramerton
*Allen, Sylvia	Charlotte
*Allen, W. O.	Hendersonville
*Allgood, R. A.	Fayetteville
Alyea, Edwin P.	Durham
Ambler, Arthur C.	Asheville
*Anders, McT. G., (Hon.)	Gastonia
*Anderson, Chas. A., (Hon.)	Burlington
Anderson, R. S.	Rocky Mount
Anderson, Thomas Eli, (Hon.)	Statesville
*Anderson, W. B.	Durham
Anderson, Wade H.	Wilson
*Andrews, John M.	Lexington
Angel, Edgar	Franklin
Angel, Furman	Franklin
Anthony, J. E.	Kings Mountain
Anthony, W. A.	Gastonia
Archer, Isaac J.	Black Mountain
Ashburn, C. W.	Statesville
Ashby, E. C.	Mount Airy
*Ashby, J. W.	Raleigh
Ashe, J. R.	Charlotte
*Ashcraft, J. E., (Hon.)	Fayetteville
Ashford, Chas. Hall	New Bern
Ashworth, B. L., (Hon.)	Marion
*Ashworth, W. C., (Hon.)	Greensboro
*Averitt, K. G., (Hon.)	Cedar Creek
*Avery, E. S.	Winston-Salem
Aycock, F. M.	Princeton
Aydlett, H. T.	Greensboro
Aydlette, Joseph P. (Hon.)	Earl
Baier, Geo. F., Jr.	W. Asheville
*Bailey, C. W.	Rocky Mount
Baker, Horace M.	Lumberton
Baker, J. M., (Hon.)	Tarboro
Baker, W. E.	Arden
Bandy, W. G.	Lincolnton
Banner, A. C.	Greensboro
*Banner, Chas. W., OALR, (Hon.)—	—Greensboro
*Barbee, G. S.	Zebulon
Bardin, R. M.	Rutherfordton
*Barefoot, Graham B.	Wilmington
Barefoot, William F.	Wilmington
Barker, C. S.	New Bern
*Barnes, Dempsey	Asheboro
*Barnes, J. T.	Asheboro
Barnes, Tiffany	Star
Barrett, H. P.	Charlotte
*Barrett, J. M.	Greenville
*Barron, A. A.	Charlotte
*Basnight, Thos. G.	Stokes
Bass, H. H., (Hon.)	Henderson
*Bass, H. H., Jr.	Henderson
Bass, Spencer P.	Tarboro
Battle, Ivan P.	Rocky Mount
*Battle, John T. J., (Hon.)	Greensboro
Battle, N. P.	Rocky Mount
Baynes, R. H.	Hurdle Mills
Beach, W. R.	Hudson
*Beall, L. G.	Black Mountain
Beam, H. M.	Roxboro
*Beam, R. S., OALR	Lumberton
*Beasley, E. B.	Fountain
Beavers, J. W.	Kernersville
Beckwith, R. P.	Roanoke Rapids
Beers, David L.	Asheville
Bell, A. E., (Hon.)	Mooresville
Bell, Carl W.	Raleigh
*Bell, F. O.	Burlington
Bell, J. C.	Maysville
*Bell, G. E.	Wilson
Bellamy, Robert H., (Hon.)	Wilmington
*Belton, J. F.	Winston-Salem

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Benbow, Edgar V.	Winston-Salem
Benbow, J. T.	Winston-Salem
Bennett, E. C.	Elizabethtown
Bennett, Jos. H.	Wadesboro
Bennett, W. L.	Bald Creek
*Benson, N. O.	Lumberton
Berry, John	Greensboro
Berryhill, W. R.	Chapel Hill
Best, D. E.	Goldsboro
Best, Henry B.	Wilson
Bethune, A. C.	Raeford
Biggs, Montgomery H.	Rutherfordton
*Bigler, V. L.	Albemarle
Billings, G. M.	Morganton
Bitting, Numa Duncan	Durham
*Bittinger, S. M.	Sanatorium
Bizzell, M. E., OALR	Goldsboro
*Black, George Wm.	Charlotte
Black, O. R.	Landis
Blackshear, T. J., OALR	Wilson
Blackwelder, Verne H.	Lenoir
Blair, Andrew	Charlotte
Blair, A. McNeil	Southern Pines
*Blair, J. L.	Gastonia
Blair, M. P.	Marshville
Blanchard, T. W.	Hobbsville
Bliss, F. E.	Fletcher
Block, Milton E.	Windsor
*Blue, A. McN.	Carthage
*Blue, Waylon	Jonesboro
Blumberg, Alfred	Oteen
Boger, D. T.	Monroe
*Boice, E. S.	Rocky Mount
*Bolt, C. A.	Marshville
Boney, Elwood R.	Kinston
Bonner, J. B.	Aurora
*Bonner, K. P. B., (Hon.)	Morehead City
*Bonner, M. D.	Jamestown
*Bonner, O. B., OALR	High Point
*Booker, L. S.	Durham
Booker, Edwin N.	Selma
*Boone, W. H., (Hon.)	Durham
*Boone, W. W.	Durham
*Bost, T. C.	Charlotte
Bostic, Wm. C.	Forest City
Bostic, W. C., Jr.	Forest City
*Bowen, J. P.	Aberdeen
*Bowers, M. A.	Winston-Salem
Bowles, Francis N.	Durham
Bowling, J. M.	Durham
*Bowman, C. R.	Kannapolis
*Bowman, E. L.	Lumberton
Bowman, H. E.	Aberdeen
Bowman, H. P.	Greensboro
Braddy, Wade H.	Burlington
Bradford, W. Z.	Charlotte
Bradsher, J. S.	Stovall
Brandon, W. O.	Concord
Brantley, Hassell, OALR	Spring Hope
Brantley, J. C.	Spring Hope
Braudwell, L. J.	Wendell
*Bray, T. L.	Plymouth
*Brenizer, A. G., Jr.	Charlotte
*Brewer, J. S.	Roseboro
Brewton, W. A.	Enka
*Bridger, D. H.	Bladenboro
*Bridges, D. T.	Lattimore
*Briggs, Henry H., Jr., OPH	Asheville
Brinkley, H. M.	Durham
*Bristow, C. O.	Rockingham
Britt, C. S.	Charlotte
Britt, J. N.	Lumberton
*Britt, T. C.	Mt. Airy
*Broadway, R. E.	Tarboro
*Brockmann, Harry L.	High Point
*Brooks, B. U.	Durham
Brooks, F. P.	Greenville
Brooks, H. E.	Clayton
*Brooks, R. E.	Burlington
Brookshire, H. G.	Asheville
*Broun, M. S., OALR	Asheville
Brown, C. E.	Salisbury
Brown, F. B.	Winston-Salem
Brown, G. A., (Hon.)	Mt. Ulla
*Brown, G. W.	Raeford
*Brown, J. S., Sr., (Hon.)	Hendersonville
Brown, Kermit, E.	Asheville
Brown, Robt. Hyatt	Hendersonville
*Brown, W. M. B., OALR	Greenville
Brownsberger, Ethel	Biltmore
*Brownsberger, John F.	Biltmore
*Brunson, E. P.	Albemarle
Bryan, Lorenzo D.	Snead's Ferry
*Buchanan, L. T.	Laurinburg
Buckner, J. M.	Swannanoa
Buckner, Margaret	Charlotte
Buffaloe, J. S., (Hon.)	Garner
*Brown, J. S., Jr.	Hendersonville
*Bugg, C. R.	Raleigh
*Buie, Roderick M.	Greensboro
*Bulla, A. C.	Raleigh
*Bulla, M. S.	Elizabeth City
*Bullitt, J. B.	Chapel Hill
Bullock, Thomas C., (Hon.)	Autryville
*Bulluck, Ernest S.	Wilmington
Bunch, Charles	Charlotte

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Bunn, J. J	Mt. Pleasant
Burleson, W. B	Plumtree
Burns, J. E	Concord
Burrus, John T., (Hon.)	High Point
*Burt, B. W., (Hon.)	Holly Springs
Burt, S. P., (Hon.)	Louisburg
Butler, Leroy J	Winston-Salem
Butt, R. B	Marion
*Byerly, Andrew B., (Hon.)	Cooleemee
*Byrnes, T. H	Durham
Caddell, G. C	Hoffman
*Caldwell, D. G	Concord
Camp, Horton	Pittsboro
Campbell, Alton C	Raleigh
Campbell, A. S	Durham
Campbell, Jas. I	Norwood
Campbell, J. W	Gastonia
Candler, Chas. Z	Sylva
*Carlton, Romulus L	Winston-Salem
Carlyle, J. B	Burlington
Carmichael, T. W	Rowland
*Carpenter, Coy C	Wake Forest
Carr, Eugene M	Asheville
*Carr, M. L	LaGrange
*Carr, Ransom Lee	Rose Hill
*Carrington, G. L	Burlington
*Carrington, S. M	Oxford
Carroll, F. W	Hookerton
Carter, Bayard	Durham
Carter, H. W., OALR	Washington
Carter, P. C	Madison
*Carter, Thos. L	Gatesville
Castelloe, Cola	Windsor
*Casstevens, J. C	Clemmons
Casteen, Kenan, OALR	Leaksville
Cater, R. L	Greensboro
*Cathell, E. J	Lexington
Caviness, Zebulon M., (Hon.)	Raleigh
*Caviness, V. S	Raleigh
Cekada, Emil B	Durham
Chadwick, W. S	Beaufort
Chambers, P. J	Charlotte
Cheadle, C. M	Burnsville
*Cheek, C. E	Fuquay Springs
Cheesborough, Thos. P., (Hon.)	—Biltmore
*Chester, P. J., OALR	Southern Pines
Cheves, W. G	Bunn
*Chiles, George C	Sanford
Choate, A. B	Charlotte
Clark, Badie T	Wilson
Clark, D. D	Clarkton
Clark, E. S	Clarkton
Clark, H. S	Asheville
Clary, Wm. T	Greensboro
Clay, E. L	Timberlake
*Clayton, R. B	Statesville
Clement, Edward B., OALR	Salisbury
Clyatt, Claude Eugene	Denton
*Cobb, Donnell B	Goldsboro
Cobb, Wm. H., Jr., (Hon.)	Goldsboro
Cocke, C. H	Asheville
Cocke, E. R	Asheville
Cocke, Jere E	Asheville
*Coddington, H. A	Wilmington
*Cook, H. L., OALR	Greensboro
Cook, J. L	Winston-Salem
*Cook, W. E	Mebane
*Cooke, G. C	Winston-Salem
Cooke, Q. H	Rich Square
Colby, C. DeW	Asheville
*Cole, Walter F	Greensboro
Coleman, L. A	Salisbury
Collins, Ruth M	Greensboro
*Combs, Fielding, ALR	Winston-Salem
*Combs, Jos. J	Raleigh
Cooper, A. Derwin	Durham
*Cooper, G. M	Raleigh
Coppedge, T. O	Nashville
*Coppridge, W. M	Durham
Corbett, J. P	Swansboro
Cornwell, A. M	Lincolnton
Corbett, Clarence Lee	Dunn
Costner, W. V	Lincolnton
Cotten, Clyde E., (Hon.)	Asheville
*Couch, V. F., ALR	Winston-Salem
Covington, J. M	Wadesboro
Covington, J. M. C	Roanoke Rapids
Cox, E. L., (Hon.)	Jacksonville
Cox, G. S	Tabor
Cox, Thomas A	Hertford
Cozart, B. F	Reidsville
Cozart, S. R	Greensboro
*Cozart, W. S	Fuquay Springs
*Craddock, A. B	Asheville
*Craig, S. Douglas	Winston-Salem
Craft, C. C	Hickory
Cranford, J. F	Gastonia
*Cranmer, J. B	Wilmington
Cranz, Oscar W	Wilmington
Craven, Erle	Lexington
*Craven, F. C	Asheboro
Craven, Jean	Lexington
Craven, Thomas	Huntersville
Craven, W. W	Charlotte
Crawford, Robt. H	Rutherfordton

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Crawford, W. J.	Goldsboro
Credle, C. S.	Colerain
*Crisp, S. M.	Greenville
*Crispell, R. S.	Durham
*Crouch, A. McR.	Wilmington
Crouch, T. D.	Stony Point
Crow, S. S.	Asheville
*Crowell, A. J., (Hon.)	Charlotte
*Crowell, L. A., (Hon.)	Lincolnton
*Crowell, L. A., Jr.	Lincolnton
Crump, Curtis	Asheville
*Crumpler, James F.	Wilmington
*Crumpler, Paul	Clinton
Cummings, M. P.	Reidsville
*Currie, D. S.	Parkton
*Cutchin, J. Henry	Whitakers
*Dale, G. C.	Goldsboro
*Daligny, Charles, (Hon.)	Troy
*Dalton, B. B.	Rockingham
Dalton, Wm. N.	Winston-Salem
*Daniel, N. C.	Oxford
*Daniels, O. C., OALR	Oriental
Daniels, R. L.	New Bern
Darden, D. B.	Stantonsburg
*Daughtridge, A. L.	Rocky Mount
Davenport, C. A.	Hertford
*Davidian, Varton A.	Smithfield
*Davidson, Jno. E. S., (Hon.)	Charlotte
*Davis, F. M.	Wilson
Davis, George	Beaufort
*Davis, J. M.	Wadesboro
*Davis, Jas. W.	Statesville
Davis, P. B., Sheraton Hotel,	High Point
Davis, Rachel D.	Kinston
*Davis, R. B.	Greensboro
*Davis, Stephen W.	Charlotte
Davis, Thomas W., OALR, (Hon.)	—Winston-Salem
Davis, T. M.	Charlotte
*Davison, Wilburt C.	Durham
Dawson, J. N.	Bolton
Dawson, W. E.	Hookerton
Deans, A. W.	Battleboro
DeArmon, J. McC., (Hon.)	Charlotte
*Dees, D. A., OALR	Bayboro
*Dees, R. E.	Greensboro
Dees, Rigdon O.	Greensboro
DeLaney, C. O.	Winston-Salem
*DeLoatch, M. W.	Tarboro
Dewar, William B.	Raleigh
Deyton, John W.	Asheville
Dick, Julius V.	Gibsonville
*Dickie, J. W.	Southern Pines
Dickinson, E. T., (Hon.), ALR	Wilson
*Dickson, M. S.	Oakboro
Diehl, James E.	Raleigh
*Dixon, G. G.	Ayden
Dixon, Guy E., (Hon.)	Hendersonville
*Dixon, W. H.	Rocky Mount
Dixon, Wm. H., (Hon.)	Ayden
*Dodge, Eva F.	Winston-Salem
Dosher, J. Arthur	Southport
*Dosher, Wm. S.	Southport
Doughton, J. L.	Sparta
*Drummond, C. S.	Winston-Salem
*Duckett, V. H.	Canton
Duffy, Charles	New Bern
Duffy, R. N.	New Bern
Duigid, Jos. W.	Dover
Dula, F. M.	Lenoir
Duncan, Amos C.	Forest City
*Duncan, S. A.	Benson
Dunlap, L. V.	Albemarle
*Durham, C. W.	Greensboro
Eagles, Chas. S.	Saratoga
*Eagle, J. C.	Spencer
Eagle, Watt W.	Durham
Easley, P. S.	Nashville, Tenn. (Iredell-Alexander)
*Easom, H. F.	Sanatorium
*Eason, J. A.	Williamston
Eaves, Rupert S.	Rutherfordton
Eckel, O. F.	Asheville
Eddleman, Hall M., (Hon.)	Gastonia
Egerton, G. S.	Hickory
Edwards, A. M.	Taylorsville
Edwards, B. O.	Asheville
Edwards, F. D.	Lawndale, Rt. 1
Edwards, J. D., (Hon.)	Siler City
Edwards, V. E.	Greensboro
*Eldridge, Chas. P.	Raleigh
*Elias, Lewis W.	Asheville
*Ellington, A. J., OALR	Burlington
*Elliott, A. H.	Wilmington
Elliott, J. A.	Charlotte
Elliott, J. C.	Oxford
*Elliott, W. F., OALR	Lincolnton
Elliotte, Wm.	Forest City
Ellis, Frank A.	Salisbury
Ellis, R. C., (Hon.)	Shelby
*Ennett, N. T.	Greenville
Erwin, Evan A.	Laurinburg
*Evans, J. E.	Wilmington
*Evans, L. B.	Windsor
*Everett, A. C.	Rockingham
*Faison, Elias	Charlotte

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
*Faison, Yates W.	Charlotte
Falls, Fred	Lawndale
*Farrington, R. K.	Thomasville
Farrior, J. W.	Warsaw
Farthing, L. E.	Wilmington
*Fassett, Burton W., OALR	Durham
Faulk, J. G.	Pembroke
*Fauntleroy, Jas. W.	Zirconia
*Fay, Oliver F.	Wilmington
Fearing, Isaiah, (Hon.)	Elizabeth City
Fearington, J. C. P.	Winston-Salem
*Felton, R. L.	Carthage
*Felts, Robt. L.	Durham
Fenner, Edwin F.	Henderson
Ferebee, C. G.	Morehead City
*Ferguson, R. T.	Charlotte
Ferneyhough, W. T.	Reidsville
Fetzer, P. W.	Madison
Fields, Leonard E.	Chapel Hill
Fike, Ralph L.	Wilson
Finch, O. E.	Raleigh
Finney, J. R.	Boonville
*Fitzgerald, J. H., OALR	Smithfield
*Flagge, Philip W.	High Point
Fleetwood, Jos. A.	Conway
Fleming, Fred	Coats
Fleming, L. E.	Charlotte
*Fleming, M. I.	Rocky Mount
Flemming, Giles M.	Cleveland
Flippin, J. M., (Hon.)	Pilot Mountain
Flippin, Samuel T., (Hon.)	Siloam
Flowers, Clarence A.	Wendell
Flowers, C. E.	Zebulon
Floyd, H. T.	Batavia, N. Y.
Floyd, L. D.	Fair Bluff
Ford, D. E.	Washington
*Formyduval, T.	Whiteville
Forrest, D. E.	Hillsboro
Fortune, Alex F., (Hon.)	Greensboro
*Foster, H. H.	Norlina
Foster, J. F.	Sanford
*Foster, M. T.	Fayetteville
*Fox, P. G.	Raleigh
*Fox, Robt. Eugene	Asheville
Francis, Wm. G.	Waynesville
*Franklin, Ernest W., Jr.	Charlotte
*Frazier, J. W.	Salisbury
Freeman, J. D., OALR	Wilmington
Freeman, R. H.	Raleigh
*Freeman, Wm. T.	Biltmore
Fresh, W. M.	Hickory
Frink, H. W.	Chapel Hill
*Fritz, William A.	Hickory
Frizzelle, M. T.	Ayden
*Frye, Glenn R.	Hickory
Fulghum, Jas. E.	Louisburg
Futrell, L. M.	Murfreesboro
Gage, L. G.	Charlotte
Gainey, John W.	Fayetteville
Gallant, Robt. M.	Charlotte
Galloway, W. C., (Hon.), OALR—	—Wilmington
Gambill, I. S.	Elkin
Gamble, J. F., OPH	Lincolnton
*Gamble, J. R.	Lincolnton
*Gambrell, Grover C.	Lexington
Gantt, L. Rosa H.	Tryon
*Gardner, C. E., Jr.	Durham
Garren, R. H.	Monroe
Garrenton, Cecil	Bethel
*Garrett, F. B.	Rockingham
*Garrison, D. A., (Hon.)	Gastonia
*Garrison, R. B.	Hamlet
*Gariss, F. H.	Lewiston
*Garvey, Fred K.	Winston-Salem
*Garvey, R. R.	Winston-Salem
Gaskins, C. W.	Asheville
*Gaskins, J. S.	Albemarle
Gaskin, Lewis R.	Albemarle
*Gaskin, Madge B.	Albemarle
Gaul, Jno. Stuart	Charlotte
Geddie, K. B.	High Point
Gentry, Geo. W.	Roxboro
*Gibbon, James W.	Charlotte
Gibbon, Robert L., (Hon.)	Charlotte
Gibbs, E. W.	Shelby
Gibbs, J. B.	Burnsville
Gibson, John S.	Gibson
Gibson, W. T.	Roper
*Gibson, M. R., OALR	Raleigh
Gilmore, C. M.	Greensboro
Gilmore, W. G.	Tombstone, Ariz. (Iredell-Alexander)
Gilreath, Frank H., (Hon.)—	—North Wilkesboro
*Glascock, Joy H., (Hon.)	Greensboro
Glenn, C. F.	Rutherfordton
*Glenn, H. F., Jr.	Gastonia
*Glenn, Lucius N., (Hon.)	Gastonia
Glover, F. O.	Salisbury
Godwin, G. C.	Oteen
*Gold, Ben	Shelby
Gold, Charles F.	Rutherfordton
Gold, T. B., ALR	Shelby
*Goley, Willard Coe	Graham
Goley, Wm. R.	Shallotte

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Goode, T. V.	Statesville
*Gooding, G. V.	Kenansville
*Goodman, A. B., (Hon.)	Lenoir
Goswick, H. W., Jr.	Winston-Salem
*Goodwin, O. S.	Apex
Goudelock, Jno. J.	Monroe
Goudge, Mabel E.	West Durham
Gouge, A. E.	Bakersville
Gouger, Geo. J., (Hon.)	Concord
*Gove, Anna M., (Hon.)	Greensboro
Grady, F. M.	Mooresville
Grady, Jas. C., (Hon.)	Kenly
Grady, Leland V.	Wilson, Rt. 2
Grady, Wm. Earle, (Hon.)	Tryon
*Grantham, Wm. L.	Asheville
Gray, Eugene P.	Winston-Salem
Grayson, C. S.	High Point
Green, Wm. W.	Tarboro
Greene, Jos. B., OALR	Asheville
*Greene, P. Y.	Raleigh
Greenwood, A. B.	Asheville
*Gregg, A. D.	Liberty
Grier, Charles T.	Carthage
*Griffin, H. L.	Asheboro
*Griffin, H. W.	Hickory
Griffin, M. A.	Asheville
*Griffin, W. R.	Asheville
Griffith, F. W.	Asheville
Griffith, L. M., OALR	Asheville
Griggs, W. T., (Hon.)	Poplar Branch
*Grimes, W. L.	Winston-Salem
*Groome, J. G.	High Point
Groves, R. B.	Lowell
Guyton, C. L.	Monroe
*Gwyn, H. L.	Yanceyville
Haar, F. B.	Greenville
*Hackney, Ben H.	Lucama
Hagaman, J. B.	Boone
Halford, Jos. W., (Hon.)	Lillington
Hall, James S.	Wilmington
Hall, L. S.	Yadkinville
*Hall, W. D.	Raleigh
*Ham, Clem	Goldsboro
*Hamblen, E. C.	Durham
*Hambrick, Robt. T.	Hickory
Hamer, Douglas, Jr.	Lenoir
Hamer, W. A.	Chadwick
*Hamilton, John H.	Raleigh
Hammond, A. F.	Polloksville
*Hand, Edgar H.	Charlotte
Hanes, F. M.	Durham
Hansen-Pruss, O. C. E.	Durham
*Harbison, J. W.	Shelby
Hardee, W. P.	Durham
*Harden, Graham	Burlington
Harden, R. N.	Greensboro
*Hardin, E. R.	Lumberton
Hardin, R. H.	Banner Elk
Harding, B. H.	Hamptonville
Hardy, Ira M., OALR, (Hon.)	Kinston
Hare, R. B.	Wilmington
Harper, J. H.	Snow Hill
*Harrell, L. J.	Goldsboro
Harrell, W. H.	Creswell
Harrill, L. B., (Hon.)	Caroleen
Harris, Arthur G.	Fairfield
*Harris, W. T.	Troy
Harrison, Edmund, (Hon.)	Greensboro
Harrison, Edward T.	High Point
Harrison, H. H.	Asheville
Harriss, Andrew H., (Hon.)	Wilmington
*Hart, Deryl	Durham
Hart, O. J.	Winston-Salem
*Hart, V. K.	Charlotte
Hathcock, Thos. A., (Hon.)	Norwood
Hatcher, M. A.	Hamlet
Hayes, R. B.	Hillsboro
Hays, B. K., (Hon.)	Oxford
Haywood, C. L., Jr.	Durham
*Haywood, Hubert B., Jr.	Raleigh
Head, W. T.	Campobello, S. C., Rt. 4 (Rutherford Co.)
*Hedgepeth, E. McG.	Chapel Hill
Hedgpeth, L. R.	Lumberton
*Hedrick, C. R.	Lenoir
*Hege, J. Roy	Winston-Salem
*Heinitsh, George	Durham
Helms, J. B.	Morganton
Helms, T. L.	Randleman
Helsabeck, C. J.	Walnut Cove
Henderson, C. C.	Mount Olive
Henderson, Irma C.	Asheville
Henderson, Jno. P.	Jacksonville
Henry, T. B.	Rockingham
Hensley, Chas. A.	Asheville
Herbert, Fred L.	Andrews
Herbert, Wm. P.	Asheville
Herman, Chas. B.	Statesville
*Herring, E. H.	Raleigh
Hester, Jos. R.	Wendell
Hester, Wm.	Reidsville
Hiatt, H. B.	Wilmington
Hicks, Calvin S., (Hon.)	Durham
Hicks, I. F., (Hon.)	Dunn
*Hicks, V. M., Oph.	Raleigh
Highsmith, Charles, (Hon.)	Dunn

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
*Highsmith, J. D.	Fayetteville
*Highsmith, J. F., (Hon.)	Fayetteville
Highsmith, J. F., Jr.	Fayetteville
*Highsmith, Seavy, (Hon.)	Fayetteville
*Highsmith, W. C.	Fayetteville
Hill, J. N.	Murphy
*Hill, M. D.	Raleigh
*Hill, Wm. I., (Hon.)	Albemarle
Hinnant, Milford	Micro
Hipp, Edw. R.	Charlotte
Hipps, A. G. T.	Asheville
*Hocutt, Battle A.	Clayton
*Hodgin, H. H.	Red Springs
Hoggard, J. T.	Wilmington
Holbrook, J. Samuel	Statesville
Holleman, Chas.	Winston-Salem
*Holloway, Joseph C.	Durham
Holloway, Robert Lee, (Hon.)—	—West Durham
Hollyday, W. M., OALR	Asheville
*Holmes, A. B.	Fairmont
*Holmes, George W.	Winston-Salem
*Holt, D. W.	Greensboro
*Holt, Wm. P., (Hon.)	Erwin
Holt, Wm. P., Jr.	Erwin
Holt, T. J.	Warrenton
*Hooker, J. S.	Chapel Hill
Hooks, Borden	Tarboro
Hooper, D. D.	Sylva
Hooper, Jos. W.	Wilmington
Hoover, C. H.	Crouse
Horton, M. C., OALR	Raleigh
Horton, W. C., (Hon.)	Raleigh
Houck, Albert F., (Hon.)	Lenoir
House, W. O.	Tarboro
Houser, E. A., (Hon.)	Shelby
*Houser, Forest M.	Cherryville
Houser, O. J.	Charlotte
*Hovis, L. W., OALR	Charlotte
Howard, C. E.	Goldsboro
Howard, J. R.	Concord
Howell, W. L.	Ellerbe
Hubbard, Chas. C., (Hon.)	Farmer
Hubbard, Fred C.	North Wilkesboro
*Hudson, C. C.	Greensboro
*Huffines, T. R.	Asheville
Hunsucker, Chas. R.	Hickory
Hunt, J. F.	Spindale
*Hunt, J. S.	Charlotte
Hunt, W. Bryce	Lexington
Hunter, Frank P.	Warrenton
Hunter, J. P.	Cary
Hunter, L. W., (Hon.)	Charlotte, Rt. 1
*Hunter, W. Myers	Charlotte
*Hunter, W. C.	Wilson
Hurdle, S. W.	Winston-Salem
*Huston, Jno. W.	Asheville
Hutchens, E. M.	North Wilkesboro
*Hutchinson, S. S.	Bladenboro
Hyde, Francis Edward	Beaufort
Ingersoll, Louise M.	Asheville
*Ingram, Chas. B., (Hon.)	Mt. Gilead
Irwin, Henderson	Eureka
*Ivey, H. B.	Goldsboro
Ivey, R. R., U.S.P.H.S.	Biltmore
*Jackson, Walter Leo	High Point
Jacocks, W. P.	New York City (Lincoln Co.)
James, Albert W.	Laurinburg
*James, F. P.	Laurinburg
*James, W. D.	Hamlet
Jarboe, Parran	Greensboro
Jarman, F. G.	Roanoke Rapids
*Jennings, C. W., OALR	Greensboro
*Jennings, R. G.	Thomasville
Jervey, A. J.	Tryon
Jett, Samuel G.	Reidsville
Jewett, R. D., (Hon.), OALR—	—Wilmington
John, Peter, (Hon.)	Laurinburg
*Johnson, A. N.	Garland
Johnson, C. T.	Red Spring
*Johnson, Floyd	Whiteville
Johnson, Geo. W.	Wilmington
*Johnson, Harry L.	Elkin
Johnson, H. H.	Louisburg
Johnson, John B.	Old Fort
*Johnson, Jos. L.	Graham
*Johnson, L. R.	Ramseur
Johnson, N. M., (Hon.)	Durham
*Johnson, Paul W.	Winston-Salem
*Johnson, Thos. C., (Hon.)	Lumberton
Johnson, W. A.	Reidsville
*Johnson, Walter R.	Asheville
Johnson, W. C.	Canton
*Johnson, Wingate M.	Winston-Salem
Johnston, J. G., OALR	Charlotte
Johnston, Christopher	Durham
Johnston, W. W.	Manteo
Jonas, John F., (Hon.)	Marion
Jones, Beverly N., OALR	Winston-Salem
*Jones, Carey C.	Apex
Jones, Catesby	Asheville
Jones, D. C.	Lansing
Jones, R. Duval	New Bern
Jones, R. R., Jr.	Durham

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Jones, R. Rives	Winston-Salem
Jones, T. Lester	Lansing
Jones, Thomas T	Durham
Jones, W. M	Gastonia
*Jones, Wm. M., (Hon.)	Greensboro
Jones, W. S	Nashville
*Jordan, Wm. S., OALR	Fayetteville
Joyner, P. W	Enfield
*Judd, Eugene C	Raleigh
*Judd, James M., (Hon.)	Varina
Jurney, Peter C	Turnersburg
Justa, Samuel H	Macclessfield
Justice, Gaston B	Marion
Justice, L. H	Littleton
Keever, Jas. W	Hickory
Keiger, Jas. A	Greensboro
Keiger, O. R	Winston-Salem
*Keister, W. E	Kinston
*Keith, Marion Y	Greensboro
Kelly, Luther W	Charlotte
Kendall, B. H	Shelby
Kende, Tibor N	Northport, L. I. (Burke Co.)
Kenfield, H. W	Hatteras
*Kennedy, John P	Charlotte
Kent, Alfred A., (Hon.)	Winter Park —Florida, (Caldwell Co.)
Kent, Alfred A., Jr	Granite Falls
Kerns, T. C., OALR	Durham
Kerr, John D	Clinton
*Kerr, Jas. E., (Hon.)	Winston-Salem
Ketchie, J. M	Salisbury
Ketner, Fred Y	Concord
Kibler, W. H	Morganton
Kimberly, David, Jr	Hot Springs
King, Edward, 1060 Park Ave.,	—New York, N. Y., (Buncombe Co.)
*King, E. S	Wake Forest
*King, Parks M., (Hon.)	Charlotte
*King, Richard M	Concord
*King, Robt. Rogers	Ellenboro
Kinlaw, Wm. B	Rocky Mount
Kinsman, Henry F	Hamlet
Kirby, Guy S., (Hon.)	Marion
Kirby, W. L	Winston-Salem
Kirk, W. R., (Hon.)	Hendersonville
Kirkpatrick, W. L	Waynesville
Kitchin, Thurman D	Wake Forest
Klutz, A. F	Maiden
Kluttz, DeWitt	Washington
*Knight, Floyd L	Sanford
Knight, H. W	Bostic
*Knight, Wm. P., (Hon.)	Greensboro
*Knowles, D. L	Rocky Mount
Knox, A. W., (Hon.)	Raleigh
*Knox, J. C	Raleigh
Knox, John, Jr	Lumberton
*Koonce, Donald	Wilmington
*Koonce, S. Everett, OALR, (Hon.)	—Wilmington
*Kornegay, Lemuel W., (Hon.)	—Rocky Mount
*Kremer, C. E., Jr	Charlotte
*Kutscher, G. W., Jr	Swannanoa
*Lackey, M. A	High Point
Lackey, W. J	Fallston
Lafferty, Robt. H	Charlotte
Lambert, W. L	Asheboro
Lamm, I. W., (Hon.)	Raleigh
*Lancaster, F. J	Lexington
Lancaster, N. F	Waynesville
*Lancaster, Wm. Jessee	Wilmington
Lane, Bessie	Raleigh
*Lane, John L., OALR	Rocky Mount
*Large, H. Lee	Rocky Mount
Lassiter, H. G	Weldon
*Lassiter, V. C	Winston-Salem
*Laton, Jas. F., OALR	Albemarle
Landen, J. F	Chinquapin
Latham, Jos. R	New Bern
Lattimore, E. B., (Hon.)	Shelby
*Lawrence, B. J	Raleigh
Lea, J. I	Tryon
*Leake, W. G	East Bend
*Ledbetter, Jas. M., OALR	Rockingham
*Lee, J. Marshall	Newton Grove
Lee, Lawrence V., (Hon.)	Lattimore
*Lee, Mike	Kinston
*Lee, Thomas L	Kinston
Leeper, Donald H	Hiddenite
*Leinbach, Robt. F	Charlotte
*Lentz, C. M	Albemarle
*Leonard, J. C., Jr	Lexington
Lewis, C. W	Beaufort
Lewis, H. W., (Hon.)	Jackson
Lewis, J. S	Hickory
*Liles, L. C	Raleigh
*Lilly, Jas. M., OALR, (Hon.)	—Fayetteville
Lindberg, O. S	Candler
Linville, A. Y., (Hon.)	Winston-Salem
Linville. W. C	Goldsboro
Lister, J. L	Jackson
Little, Lonnie M	Statesville
Liverman, J. S	Winterville
*Livingston, E. A., OALR	Gibson

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Lloyd, B. B	Carrboro
Logan, F. W. H	Rutherfordton
*London, Arthur Hill	Durham
*Long, Benj. Leroy	Glen Alpine
*Long, E. F	High Point
Long, Glenn	Newton
Long, H. F., (Hon.)	Statesville
Long, L. L	Laurel Springs
*Long, R. H	Morganton
Long, T. W. M	Roanoke Rapids
*Long, V. McK	Winston-Salem
Long, Wm. M	Mocksville
Long, Z. F	Rockingham
Looney, J. J. W., OALR	Rocky Mount
Lord, Marjery J	Montreat
Lott, Wm. C	Asheville
Love, Bedford E	Roxboro
*Love, Wm. M	Monroe
Lovelace, Thos. C	Henrietta
Lovill, Robt. J	Mount Airy
*Lowery, E. F	Raleigh
*Lowery, John R	Salisbury
*Lubchenko, N. E	Ansonville
*Lucas, Charles DeF	Charlotte
Lupton, C. C	Burlington
Lutterloh, I. Hayden, Jr	Sanford
Lyday, C. E	Gastonia
*Lyday, R. O	Greensboro
Lynch, J. M	Asheville
Lyon, Henry Wise	Windsor
MacConnell, John W., OALR—	—Davidson
*MacFayden, Paul R	Concord
*MacFayden, Paul R., Jr	Concord
MacNider, Wm. deB	Chapel Hill
MacRae, J. D., Jr	Asheville
*McAdams, C. R	Belmont
*McAnally, Jas. McG	Reidsville
McAnally, Wm. J., (Hon.)	High Point
McBee, Paul	Marion
*McBrayer, L. B., (Hon.)	Southern Pines
McBrayer, R	New York (Hoke Co.)
McBryde, Angus M	Durham
McBryde, M. H	Reidsville
*McCain, P. P	Sanatorium
*McCain, Wm. R., (Hon.)	High Point
*McCall, A. C., OALR	Asheville
McCampbell, John, (Hon.)	Morganton
McCants, C. H	Winston-Salem
McChesney, W. W	Gastonia
McClees, E. C	Elm City
McClelland, Joseph O	Maxton
McConnell, H. R	Gastonia
McCoy, Thos. M	Charlotte
McCotter, St. Elmo	Bayboro
McCracken, C. M., (Hon.)	Fairview
*McCracken, J. R., (Hon.), OALR—	—Waynesville
McCracken, M. H	Canton
McCuiston, A. M	Mt. Olive
*McCutchan, Frank, OALR	Salisbury
*McCutcheon, W. B	Durham
McDade, B. B	Burlington
McDowell, F. C	Zebulon
*McDowell, R. H	Belmont
McDowell, W. K	Greenville
*McEachern, Duncan	Wilmington
McElroy, J. L	Marshall
*McElwee, Ross S	Statesville
*McFayden, O. L	Fayetteville
*McGeachy, R. S., (Hon.)	Weldon
McGee, Jas. W., (Hon.)	Raleigh
McGee, J. M	Greensboro
*McGee, Robert L	Raleigh
*McGehee, Jno. Wm	Reidsville
*McGregor, Geo. D	Charlotte
McGoogan, Benj. J	Morven
McGowen, Claudius	Plymouth
McGuire, B. B	Newland
*McIntosh, D. M	Old Fort
*McIntrye, Stephen	Lumberton
*McIver, Lynn, (Hon.)	Sanford
*McKay, Hamilton W	Charlotte
*McKay, Jos. F., (Hon.)	Buies Creek
*McKay, Robert W	Charlotte
*McKay, W. P	Fayetteville
*McKee, John S	Raleigh
*McKee, Lewis M	Durham
*McKenzie, B. W	Salisbury
*McKnight, R. B	Charlotte
*McLaughlin, C. S., (Hon.)	Charlotte
McLaughlin, J. E., (Hon.)	Statesville
McLean, I. N	Burnsville
*McLean, John W	Godwin
McLelland, W. D	Mooresville
McLemore, Geo. A	Smithfield
*McLeod, A. H., (Hon.)	Aberdeen
McLeod, J. H	Fayetteville
*McLeod, N. H	Raleigh
*McLeod, Vida C	Southern Pines
*McLeod, W. G	Southern Pines
*McMillan, J. M	Candor
*McMillan, R. D	Red Springs
McMillan, W. D., (Hon.)	Wilmington
McNairy, Caroline	Lenoir

* Present at 1935 Meeting at Pinehurst.

Name	Address
McNeil, Jas. H.	North Wilkesboro
McPhail, L. D.	Charlotte
McPheeters, S. B.	Charlotte
McPherson, C. W., OALR	Burlington
McPherson, R. G.	Saxapahaw
*McPherson, S. D., OALR, (Hon.)—	—Durham
*Mackie, Geo. C.	Wake Forest
*Mackie, N. W.	Yadkinville
*Macon, G. H.	Warrenton
Madison, W. H.	Sylva
Mallett, E. P., (Hon.)	Hendersonville
*Malloy, S. A., (Hon.)	Yanceyville
Maness, A. K.	Greensboro
*Mangum, C. S.	Chapel Hill
Mann, E. M.	Moyock
*Mann, I. Thurman	High Point
*Manning, I. H., (Hon.)	Chapel Hill
Mariner, N. B.	Belhaven
Markham, Blackwell	Durham
*Marr, M. W.	Pinehurst
Marsh, Frank B.	Salisbury
Marshall, J. F.	Winston-Salem
*Martin, J. A.	Lumberton
*Martin, J. F.	Dunn
Martin, J. H.	Red Oaks
*Martin, J. W.	Roanoke Rapids
*Martin, Moir S.	Mt. Airy
*Martin, William F.	Charlotte
*Martin, W. J.	Richmond, Va. (Mecklenburg)
Mason, Manly	Newport
Massey, C. C.	Smithfield
*Matheson, J. Gaddy	Ahoskie
Matheson, James P.	Charlotte
*Matheson, R. A.	Raeford
Matros, Nathaniel H.	Oteen
*Mathews, Vann M.	Charlotte
Matthews, B. B.	Shelby
Matthews, James O., (Hon.)—	—Clinton, R.F.D.
*Matthews, M. L., (Hon.), OALR—	—Sanford
Matthews, Wm. W.	Leaksville
*Maudlin, Paul R.	Charlotte
Maxwell, C. S.	Beaufort
*Mayer, W. B.	Charlotte
Meadows, W. J., (Hon.)	Greensboro
Mears, George A.	Asheville
Mebane, W. C.	Wilmington
Mebane, W. C., Jr.	Wilmington
Misenheimer, E. A.	Concord
Melvin, W. C.	Linden
Menzies, H. C., (Hon.)	Hickory
Merritt, John H.	Woodsdale, R. 1
Miles, May S.	Greensboro
Miles, Walter W.	Champion
*Milham, C. G.	Hamlet
Millander, Chas. W.	Asheville
Miller, J. F.	Marion
Miller, O. L.	Charlotte
*Miller, R. C.	Gastonia
Miller, Robert B., (Hon.)	Goldsboro
*Milliken, J. S.	Southern Pines
*Mitchell, Geo. W.	Wilson
Mitchell, G. T.	Wilkesboro
Mitchell, Paul H.	Ahoskie
*Mitchell, R. C.	Mt. Airy
*Mitchell, Z. P.	Henderson
*Mitchener, J. S., OALR	Raleigh
Mock, Frank L.	Lexington, R. 3
Monk, Henry L., (Hon.)	Salisbury
*Monroe, C. R.	Pinehurst
Montgomery, Kenneth E.	Asheville
Moore, Chas. E., (Hon.)	Wilson
Moore, D. B.	Badin
*Moore, D. F.	Shelby
*Moore, Henry B.	Graham
Moore, Jos. N.	Marshall
*Moore, Julian A.	Asheville
Moore, L. W.	Beaufort
*Moore, Oren	Charlotte
*Moore, R. A.	Charlotte
*Moore, R. A.	Winston-Salem
Moore, Roy H.	Canton
*Moore, T. V.	Delco
*Moore, W. Houston	Wilmington
Morgan, B. E.	Asheville
Morgan, G. A.	Asheville
*Morrill, Jenness	Falkland
*Morris, Jos. A., (Hon.)	Oxford
Morris, Rae H.	Concord
Morton, J. X.	Faison
Moseley, Chas. W., (Hon.)	Greensboro
*Moseley, Z. V.	Kinston
Moss, G. O.	Cliffside
*Motley, Fred Elliott	Charlotte
*Mudgett, W. C.	Southern Pines
*Mullen, M. P.	Wilson
*Munroe, H. Stokes	Charlotte
*Munroe, J. P., (Hon.)	Charlotte
Munt, H. F.	Winston-Salem
Murchison, D. R.	Wilmington
Murphy, Gibbons W.	Asheville
*Murphy, W. B.	Snow Hill
*Murray, R. L.	Raeford

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Myers, Alonzo	Charlotte
Myers, D. L.	Jennings
*Myers, John Q., (Hon.)	Charlotte
*Nalle, B. C., (Hon.)	Charlotte
*Nance, C. L.	Charlotte
Nash, J. Fred	St. Paul
Neal, J. Walter	Greensboro
*Neal, Kemp P.	Raleigh
*Neal, Paul N.	Raleigh
Neblett, H. C.	Charlotte
Neece, K. E.	Monroe
Nelson, R. J., (Hon.)	Robersonville
Nesbitt, Charles T.	Wilmington
Neville, C. H.	Scotland Neck
Newby, G. E.	Hertford
Newcombe, A. P., Jr.	Henderson
*Newell, H. A., OALR	Henderson
Newell, Leon B.	Charlotte
Newland, Chas. L.	Brevard
Newman, Harold H.	Salisbury
Newton, Howard L.	Charlotte
Nichols, Alvin A.	Sylva
Nichols, Ashbury S.	Sylva
Nichols, Austin F.	Roxboro
Nichols, R. E., Jr.	Durham
*Nichols, Rhodes E., (Hon.)—	—Durham, Rt. 8
Nicholson, B. M.	Enfield
*Nicholson, N. G., Jr.	Mt. Gilead
Nicholson, P. A., (Hon.)	Washington
Nisbet, D. Heath	Charlotte
Nisbet, Walter O., (Hon.)	Charlotte
*Noble, R. P.	Raleigh
Nobles, Jos. E., (Hon.)	Greenville
Noblin, Roy L.	Oxford
*Noell, R. H.	Rocky Mount
Norburn, R. L.	Asheville
Norburn, C. S.	Asheville
Norfleet, A. C.	Tarboro
Norfleet, E. P.	Roxobel
Norman, J. S.	Hickory
Norris, Henry	Waverly Mills, S. C. (Rutherford Co.)
*Northington, J. M.	Charlotte
*Norton, Roy	Rocky Mount
*Nowell, S. C.	Hickory
Nowlin, Preston	Charlotte
Oates, George	Grover
O'Briant, A. L.	Sanford
Odell, J. W.	Dunn
*Ogburn, H. H.	Greensboro
Olive, P. W.	Fayetteville
Oliver, A. S.	Raleigh
Oliver, Robt. D.	Goldsboro
*Ormond, A. L.	Sanatorium
Ormand, J. W.	Monroe
Orr, Chas. C.	Asheville
Orr, C. V.	Andrews
Orr, P. B., (Hon.)	Asheville
Osborne, Joe E.	Rosman
Outlaw, J. K.	Albemarle
*Overcash, W. E.	Southern Pines
Owen, D. S.	Fayetteville
*Owen, J. F.	Dix Hill, Raleigh
Owen, Robert H.	Canton
*Ownbey, Arthur D.	Greensboro
*Pace, K. B.	Greenville
Paddison, J. R., (Hon.)	Kernersville
Page, B. W.	Trenton
Palmer, Horace	Littleton
*Palmer, M. C.	Tryon
Palmer, Yates S.	Valdese
*Papineau, A.	Sanatorium
Parker, G. E., (Hon.)	Benson
Parker, Geo. F.	Asheville
Parker, H. R.	Greensboro
Parker, O. L., OALR	Clinton
Parker, S. F.	Shelby
*Parker, W. T.	Fayetteville
Parke, Hugh	Elkin
Parks, W. B.	Gastonia
Parrott, M. C.	Kinston
Parrott, Wm. T., (Hon.)	Kinston
*Parsons, W. H.	Ellerbe
*Pate, F. J., OALR	Greensboro
*Pate, Jas. G.	Gibson
Pate, J. F.	Canton
*Patterson, Fred M.	Greensboro
Patterson, Jos. F.	New Bern
Patterson, J. H.	Broadway
*Patterson, Reid	Charlotte
Payne, J. W.	Hendersonville
Pearson, H. O.	Pinetops
*Peede, A. W.	Lillington
Peeler, Clarence N., OALR	Charlotte
Peeler, John H.	Salisbury
*Peery, Vance P., OALR	Kinston
Peete, C. H.	Warrenton
Pendleton, A. S.	Raleigh
Pendleton, Wilson	Asheville
*Pepper, Jno. Kerr	Winston-Salem
Perkins, Jno. R., OALR	Winston-Salem
Perry, A. H.	Wood
*Perry, D. R.	Durham
Perry, E. M.	Rocky Mount
*Perry, G. G.	High Point

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Perry, H. B	Boone
Perry, H. G	Louisburg
Person, Edgar C., OALR	Pikeville
*Person, J. B., Jr., (Hon.)	Selma
Persons, Elbert Lapsley	Durham
Peters, W. A	Elizabeth City
*Peterson,.... C. A	Spruce Pine
Petrie, Robt. Wm., (Hon.), OALR—	—Murphy
Petteway, George H	Charlotte
*Pfohl, Samuel F., (Hon.)	Winston-Salem
*Phillips, C. C	Charlotte
*Phillips, C. H	Thomasville
*Phillips, E. N	Hope Mills
Phelps, J. M	Washington
Pickett, John A., (Hon.)—	—Burlington, R.F.D., 1
Pinkerton, F. C	Washington
Pittman, E. E	Oak City
*Pittman, M. A	Wilson
*Pittman, R. L	Fayetteville
*Pittman, W. A	Fayetteville
Plummer, R. E	Denton
Pollard, W. B	Winton
Pool, B. B	Winston-Salem
Poole, C. G	Winston-Salem
Poole, C. T	St. Pauls
Pope, Henry T., (Hon.)	Lumberton
*Powell, Albert H	Durham
Powers, Frank P., ALR	Wilmington
Powell, Jesse A	Edenton
*Prefontaine, E	Greensboro
Pressly, Geo. W., (Hon.)	Charlotte
Pressly, J. L	Statesville
*Pressly, J. M	Belmont
*Price, H. L	Taylorsville
Price, K. A	Hickory
Pritchard, G. L	Black Mountain
*Proctor, I. M	Raleigh
Pugh, Chas. H	Gastonia
Pulliam, B. E	Winston-Salem
Purdy, J. J	Oriental
Putney, R. H	Elm City
Quickel, Thos. C., (Hon.)	Gastonia
Quinn, David E	Oteen
Raby, J. G	Tarboro
Rackley, G. D	Wagram
*Rainey, W. T	Fayetteville
Ramsaur, J. T	Gastonia
Ramseur, W. L	Kings Mountain
Ramsey, James G	Washington
Rand, E. G	Raleigh
Raney, R. B	Durham
*Rankin, Pressly R	Mt. Gilead
Rankin, R. B	Concord
*Rankin, S. W	Winston-Salem
*Rankin, Watson S., (Hon.)	Charlotte
*Ranson, J. Lester	Charlotte
*Ravenel, S. F	Greensboro
Ray, F. L	Charlotte
*Ray, John B	Leaksville
Ray, J. C	Whitaker
Ray, O. L., (Hon.)	Raleigh, Rt. 1
Ray, S. P	Leaksville
Reaves, W. P., OALR	Greensboro
Redding, Alex H., (Hon.)	Cedar Falls
*Redfern, T. C	Winston-Salem
Redwine, J. Dan	Lexington
Reed, D. H	Maxton
Reeves, B. E	W. Jefferson
*Reeves, G. F	Goldsboro
Reeves, J. L	Canton
*Reeves, Robert J	Durham
Reeves, R. J	Leicester
*Register, F. M., (Hon.)	Kinston
Reid, Geo. P., (Hon.)	Forest City
Reid, James W	Lowell
Reitzel, C. E., (Hon.)	High Point
*Reynolds, C. V., (Hon.)	Raleigh
Rhodes, Jas. S	Williamston
*Rhudy, Booker E	Greensboro
*Rhyne,, Robt. E	Gastonia
Rhyne, S. A	Statesville
Rich, J. C	Candler
*Richardson, W. P	Raleigh
*Ricks, Leonard E., (Hon.)	Fairmont
*Riggsbee, A. E	Durham
*Ringer, Paul H	Asheville
*Roberson, Foy	Durham
Roberts, Bryan N	Hillsboro
*Roberts, B. W	Durham
Roberts, Marion B	Star
Roberts, Roy F	Asheville
Roberts, W. M	Gastonia
*Robertson, E. M	Durham
Robertson, James F	Wilmington
*Robertson, J. M	Charles
Robertson, J. N., OALR	Fayetteville
*Robertson, L. H	Salisbury
Robinson, C. W	Charlotte
*Robinson, D. E	Burlington
*Robinson, E. E	Kannapolis
*Robinson, J. D	Wallace
Robinson, Robt. S	Hazelwood
Robinson, W. A	Old Fort
Rodman, J. C., (Hon.)	Washington

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Rodman, R. B.	Wilmington
Rodgers, W. D., Jr.	Warrenton
Rogers, Jas. Rufus, (Hon.)	Raleigh
Rogers, W. A., (Hon.)	Franklin
*Root, Aldert S.	Raleigh
Rose, A. H.	Smithfield
Rose, A. S.	Chapel Hill
*Rose, David J.	Goldsboro
*Rose, James	Pikeville
*Ross, Geo. H., (Hon.)	East Durham
Ross, Otho B.	Charlotte
*Ross, Robert A.	Durham
Ross, Thos. W.	Charlotte
*Rosser, R. G.	Vass
*Rousseau, J. P.	Winston-Salem
*Royal, Ben F.	Morehead City
Royal, D. M.	Salemburg
*Royall, M. A., (Hon.), OALR	Elkin
*Royster, Hubert A., (Hon.)	Raleigh
Royster, S. S., (Hon.)	Shelby
Royster, Thomas H., OALR—	—Roanoke Rapids
*Royster, Thos. S.	Henderson
*Ruark, R. W.	Raleigh
Rucker, A. A.	Rutherfordton
*Rudd, J. C.	Randleman
Rudd, P. D.	Reidsville
Rudisill, J. D.	Lenoir
Ruffin, D. W.	Ahoskie
Ruffin, J. B.	Powellsville
Ruffin, J. M.	Durham
Russell, C. R.	Granite Falls
Russell, Jesse M.	Canton
Russell, W. M.	Asheville
Russell, Lloyd P.	Fletchers
Sabiston, Frank, OALR	Kinston
Sadler, R. C.	Whiteville
Saliba, W. M., OALR	Wilson
Sams, W. A.	Marshall
Salley, E. McQueen	Hendersonville
*Salmons, H. C.	Elkin
*Sasser, T. J.	Charlotte
Saunders, Joseph H.	Williamston
Saunders, John R.	Lewiston
Saunders, John T.	Asheville
Saunders, S. A.	Aulander
*Saunders, S. Stewart	High Point
Sawyer, Chas. J., (Hon.), OALR—	—Windsor
Sawyer, W. W., (Hon.), OALR—	—Elizabeth City
Schaffle, Karl	Asheville
Schallert, P. O.	Winston-Salem
Schenk, Sam M.	Shelby
Schoenheit, E. W.	Asheville
Schoonover, R. A.	Greensboro
Schuler, J. E.	East Durham
Scott, R. C.	Asheville
Scott, S. F.	Union Ridge
Scruggs, W. H.	Concord
Scruggs, W. Marvin	Charlotte
*Seay, Hillis L.	Sanatorium
*Seay, T. W.	East Spencer
Sessoms, E. T.	Roseboro
Sevier, J. T., (Hon.)	Asheville
*Shafer, Irving E.	Salisbury
Shands, Alfred Rives, Jr.	Durham
Sharpe, C. R.	Lexington
*Sharpe, F. A.	Greensboro
Sharpe, Frank L.	Statesville
*Shaver, W. T.	Albemarle
*Shaw, J. A.	Fayetteville
*Shaw, L. R.	Statesville
*Shelburne, P. A.	Greensboro
Sherrill, C. L.	Statesville
*Shields, Henry B., (Hon.)	Carthage
Shirley, H. C., OALR	Charlotte
Shore, T. W.	Boonville
Shuford, Mary Frances	Asheville
*Shull, J. Rush	Charlotte
*Sidbury, J. B.	Wilmington
*Sigman, F. G.	Spencer
Sigmund, Wm. B.	Asheville
Sikes, G. L., (Hon.)	Salemburg
*Sikes, Henry	Greensboro
Simmons, L. L., OALR	Greensboro
Simmons, R. R.	Winston-Salem
*Simons, C. E.	Wilson
Simpson, H. H.	Altamahaw
Singletary, G. C.	Clarkton
Sink, C. S.	N. Wilkesboro
*Sink, V. Rex	Winston-Salem
*Sisk, C. N.	Waynesville
Skinner, Louis C., (Hon.)	Greenville
*Slate, John S., (Hon.)	Winston-Salem
*Slate, J. W.	High Point
*Slate, M. L.	High Point
Slate, Wesley C.	Spencer
Sloan, A. B.	Mooresville
*Sloan, D. B., OALR	Wilmington
Sloan, H. L., Oph	Charlotte
Sloan, Wm. H.	Garland
Sloan, William S.	Waynesville
*Sloop, Eustace H.	Crossnore
Small, Victor R.	Clinton
Smith, A. Jones	Black Creek

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
*Smith, Alick T.	Greensboro
Smith, Annie T.	Durham
Smith, B. R.	Asheville
*Smith, C. T.	Rocky Mount
Smith, D. L.	Saluda
Smith, D. T.	Durham
*Smith, F. C., OALR	Charlotte
*Smith, F. G.	Wilson
*Smith, F. L.	Burlington
Smith, G. M.	Monroe
Smith, Harold Benj.	North Wilkesboro
Smith, J. A.	Lexington
Smith, John McNeill	Rowland
*Smith. Jos. E.	Windsor
*Smith, Joseph	Greenville
Smith, O. F.	Scotland Neck
*Smith, Sidney	Raleigh
Smith, Slade A.	Whiteville
Smith, W. F.	Chadbourn
*Smith, William Gordon	Thomasville
Smith, Wm. H.	Goldsboro
Smithwick, Jas. E., (Hon.)	Jamesville
Smoot, J. E., (Hon.)	Concord
*Soady, J. H.	Asheboro
Sorrell, F. Y.	Wadesboro
*Sossamon, J. C.	Midland
*Sowers, Roy G., OALR	Jonesboro
Spainhour, Ellis H., (Hon.)	Winston-Salem
Sparrow, Thos. DeL.	Charlotte
Speas, D. C.	Winston-Salem
*Speas, W. P., OALR	Winston-Salem
*Speed, J. A.	Durham
Speight, J. A.	Rocky Mount
Spencer, Frederick B.	Salisbury
Spencer, Wm. O., (Hon.)	Winston-Salem
*Spicer, Richard W.	Winston-Salem
*Spikes, N. O.	Durham
*Spoon, S. C.	Burlington
Sprinkle, C. N.	Weaverville
Sprunt, Douglas H.	Durham
Sprunt, W. H., Jr.	Winston-Salem
*Squires, Claude B.	Charlotte
Staley, S. Walter	Rocky Mount
*Stanford, Lois Foote	Durham
*Stanford, W. R.	Durham
Stanley, John H.	Four Oaks
*Stanton, D. A., (Hon.)	High Point
Starr, H. F.	Greensboro
Stellings, Richard M.	Greensboro
Stevens, A. H., Jr.	Farmville
*Stevens, M. L., (Hon.)	Asheville
*Stimpson, R. T.	Raleigh
Stiles, C. D.	Washington
Stoddard, James K.	Cashier
Stokes, Jas. E., (Hon.)	Salisbury
Stone, M. L.	Rocky Mount
Stone, Wm. M.	Dobson
*Straughan, J. W.	Warsaw
*Street, C. A.	Winston-Salem
*Street, M. E., (Hon.)	Glendon
Stretcher, R. H.	Waynesville
*Strickland, Arthur T.	Kenly
Strickland, E. F., (Hon.)	Winston-Salem
Strickland, E. L.	Wilson
Strickland, W. M.	Wendell
Stringfield, Samuel L.	Waynesville
Stringfield, Thos., (Hon.)	Waynesville
Strong, Chas. M., (Hon.)	Charlotte
*Strosnider, Chas. F.	Goldsboro
Strowd, W. A.	Durham
*Suiter, W. G.	Weldon
Sullivan, Victor	Wilmington
Summerlin, Harry	Laurinburg
*Sumner, E. A.	High Point
Sumner, Howard L.	Asheville
Sumner, Thos. W.	Fletcher
Sutton, Carl W.	Richlands
Surles, J. B.	Four Oaks
Sutton, Wm. G.	Seven Springs
Swann, C. C.	Asheville
Swann, Jos. F., (Hon.)	Gastonia
*Sweaney, H. M.	Durham
Swindell, Lewis H.	Washington
*Sykes, J. U.	Rocky Mount
*Sykes, R. P.	Asheboro
*Symington, John	Carthage
*Tally, B. T.	Albemarle
Talley, J. S.	Troutman
*Tankersley, J. W.	Greensboro
Tate, C. S.	Ramseur
Tate, W. C.	Banner Elk
Tatum, Roy C.	Statesville
*Tatum, Walter Lowe	Salisbury
*Tayloe, John Cotten	Washington
*Tayloe, Joshua, Jr.	Washington
Taylor, E. H. E.	Morganton
*Taylor, F. R.	High Point
*Taylor, G. W.	Mooresville
Taylor, H. C.	Charlotte (Chadwick Station)
Taylor, James N.	Greensboro
*Taylor, James T.	Greensboro
*Taylor, R. W.	Oxford
*Taylor, S. R., OALR	Greensboro
Taylor, T. G.	Leaksville

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Taylor, W. I.	Burgaw
Taylor, Wesley	Greensboro
Taylor, Wm. L., (Hon.)	Oxford
Templeton, J. Y.	Mooresville
Tennent, G. S., (Hon.), OALR	Asheville
*Terry, Geo. H. B., OALR	Oteen
*Terry, J. R.	Lexington
*Terry, Wm. Calvin	Hamlet
*Thaxton, B. A.	Roxboro
Thigpen, H. G.	Scotland Neck
Thomas, J. G.	Greensboro
*Thomas, W. N.	Oxford
*Thompson, A. F., (Hon.), OALR	Troy
*Thompson, C. D., (Hon.)	High Point
*Thompson, Edg. S.	Winston-Salem
Thompson, H. C.	Shelby
Thompson, Hugh A.	Raleigh
*Thompson, Joseph W.	Creedmoor
*Thompson, S. R.	Charlotte
Thompson, S. W., Jr.	Morehead City
*Thornton, W. F.	Sanatorium
*Thorp, A. T.	Rocky Mount
Thurston, Asa	Taylorsville
Timberlake, C. V.	Youngsville
Todd, L. C.	Charlotte
Townsend, M. L.	Washington, D. C. (Mecklenburg Co.)
Townsend, R. G.	St. Pauls
Triplett, W. R.	Purlear
*Trivette, W. A.	Houstonville
Trotter, Fred O.	Hendersonville
Troxler, R. M.	Burlington
Tucker, Jno. H., OALR	Charlotte
Tugman, B. W.	West Jefferson
Turlington, W. I., Jr.	Jacksonville
Turner, H. G.	Raleigh
Turner, J. P., (Hon.)	Greensboro
Turrentine, Kilby P.	Kinston
*Tuttle, Reuben G.	Winston-Salem
Tuttle, A. F.	Spray
Tydeman, F. W. L.	San Franscisco, Cal. (Mecklenburg Co.)
Tyler, E. R.	Durham
Tyndall, R. G.	Kinston
*Tyner, Carl V.	Leaksville
Tyson, J. J.	Ayden
*Tyson, T. D.	Mebane
Underwood, O. E.	Roseboro
Upchurch, J. G.	Smithfield
Upchurch, Robert T.	Henderson
Utley, H. H.	Benson
*Valk, A. deT.	Winston-Salem
Vann, H. M.	Wake Forest
Vann, J. R.	Spring Hope
*Verdery, W. C.	Fayetteville
Verner, Carl Hugh	Forest City
*Vernon, Jas. W.	Morganton
Vestal, Willis J., (Hon.)	Lexington
Vick, George D.	Selma
Wadsworth, H. B.	New Bern
Wakefield, Harry A., OALR	Charlotte
*Walker, H. D., (Hon.)	Elizabeth City
*Walker, J. B.	Burlington
Walker, L. K.	Ahoskie
Walker, Robert J., Jr.	Tarboro
*Wall, R. L.	Winston-Salem
*Walters, Chas. M.	Burlington
Walton, G. B.	Chadbourne
Wannamaker, Edw. J., Jr.	Charlotte
Ward, I. A., OALR	Elizabeth City
Ward, Jesse E.	Robersonville
*Ward, John LaB.	Asheville
*Ward, Needham E.	Greenville
*Ward, Vernon A.	Robersonville
*Ward, W. C.	Pineville
*Ward, W. T.	Raleigh
Warren, R. F.	Prospect Hill
*Warrick, L. A.	Goldsboro
Watkins, F. B.	Morganton
Watkins, G. T.	Durham
Watkins, John A.	Asheville
Watkins, W. M.	Durham
Watson, John B.	Raleigh
Watson, Paul S.	Madison
*Watson, Thos. M.	Greenville
*Watt, N. C.	Taylorsville
Weathers, Bahnson	Roanoke Rapids
*Weathers, R. R.	Knightdale
Weaver, Henry B., (Hon.)	Asheville
Weaver, W. J.	Rt. 4, Asheville
Webb, B. G., (Hon.)	Andrews
Weddington, J. L.	Hendersonville
Weizenblatt, Sprinza	Asheville
Wellborn, William R.	Elkin
Wessell, John C., (Hon.)	Wilmington
West, B. C.	Kinston
West, C. F.	Kinston
*West, Louis N., OALR	Raleigh
West, Robert M., (Hon.)	Salisbury
Westcott, W. E.	Candler
Westmoreland, J. R.	Canton
Wharton, Chas. R.	Ruffin
Wheeler, J. H.	Henderson
Wheless, W. P.	Spring Hope
Whelpley, Frank L.	Goldsboro
Whichard, M. P.	Edenton

* Present at 1935 Meeting at Pinehurst.

Name	*Address*
Whicker, Guy E.	China Grove
Whicker, Guy L.	Kannapolis
*Whims, H. C.	Waxhaw
*Whisnant, Albert M., (Hon.), OALR—	—Charlotte
*Whitaker, J. Allen	Mt. Airy
*Whitaker, Paul F.	Kinston
*Whitaker, R. B.	Whiteville
White, C. H.	Kenansville
White, F. W. M.	Halifax
White, R. A.	Asheville
*White, Thos. P.	Charlotte
White, W. H. C.	Elizabeth City
*Whitehead, S. L.	Asheville
Whitfield, Wm. Cobb, (Hon.)	Salisbury
*Whittington, Claude	Greensboro
Whittington, Jas. B.	Winston-Salem
Whittington, W. W., (Hon.)	Snow Hill
Widenhouse, M. A.	Concord
Wilkerson, Charles B.	Raleigh
Wilkes, Grover C.	Sylva
*Wilkes, Marcus B.	Laurel Hill
*Wilkins, J. C.	Haw River
Wilkins, J. W., OALR	Mt. Olive
*Wilkins, R. B., OALR	Raleigh
Wilkins, S. A., (Hon.)	Dallas
Wilkinson, C. T.	Wake Forest
Wilkinson, R. W.	Wake Forest
*Wilcox, J. W.	West End
Williams, Albert F., (Hon.)	Wilson
*Williams, Claude B.	Elizabeth City
*Williams, J. H.	Sanatorium
Williams, John D., (Hon.)—	—Guilford Station
William, J. D., Jr.	Stokesdale
*Williams, James Marcus	Warsaw
*Williams, John W.	Asheville
Williams, L. L.	Asheville
Williams, Lester L.	Marion
*Williams, L. P.	Edenton
Williams, Wm. N.	Tabor
*Willis, A. P.	Candler
*Willis, B. C.	Rocky Mount
Willis, H. C., OALR	Wilson
Willis, W. M.	Farmville
Wilson, Albert R., (Hon.)	Greensboro
*Wilson, N. G.	Madison
Wilson, R. B.	Asheville
Wilson, Robert B., (Hon.)—	—Newton Grove
*Wilson, S. Glenn	Angier
Wilson, W. G.	Smithfield
Winkler, Harry	Charlotte
Winstead, E. G.	Belhaven
Winstead, J. A.	Rocky Mount
*Winstead, J. L.	Greenville
*Winston, P. H.	Raleigh
Wiseman, P. H.	Avondale
Wishart, Wm. E.	Charlotte
*Wolfe, H. C., OALR	Greensboro
Wolff, D. R.	Greensboro
Woltz, John L.	Mt. Airy
Wood, Frank	Marion
*Wood, George T.	High Point
Wood, J. W., (Hon.)	Boiling Springs
Wood, Martha	Marion
*Woodard, A. G.	Goldsboro
Woodard, B. L.	Kenly
*Woodard, C. A.	Wilson
Woodard, G. B., OALR	Wilson
Woodcock, John H.	Hendersonville
*Woodruff, Fred G.	High Point
*Woodson, Charles W.	Salisbury
Woodward, J. G.	Asheville
Wooten, Amos Monroe	Pinetops
Wooten, Floyd P.	Kinston
*Wooten, W. I.	Greenville
Worley, J. H.	Asheville
*Wright, J. B., (Hon.), OALR	Raleigh
Wright, O. E.	Winston-Salem
Wyatt, A. T.	Lillington
Wyatt, Wortham	Winston-Salem
Wylie, W. deK.	Winston-Salem
Yarborough, Frank R.	Cary
Yarborough, R. F., (Hon.)	Louisburg
*Yoder, Paul A.	Winston-Salem
*Yokeley, Raymond V.	Thomasville
*York, Alexander Arthur	High Point
Young, G. McD.	Postell
Young, J. C.	Asheville
Yow, I. A.	Concord
*Zealy, A. H., Jr.	Goldsboro
Zimmerman, Robert U.	Welcome

* Present at 1935 Meeting at Pinehurst.

ROSTER OF FELLOWS FOR 1935

BY COUNTIES

NOTE:—Every physician in the state whose name we could secure has had an opportunity to supply correct information as to his name, postoffice, academic and medical education, date of State license and date State Society was joined. A few did not take advantage of the opportunity. Anyone finding an error should report it to the Secretary of the society.

ALAMANCE-CASWELL COUNTIES SOCIETY

Name and Address	Licensed	Joined State Society
President: Chas. A. Anderson, Burlington, (Hon.); Coll. P. and S., Balt., 1901	1893	1896
Seretary: C. C. Lupton, Burlington; Temple, 1931; U.N.C.	1931	1934
Bell, F. O., Burlington; Atlanta Med. Coll., 1918	1921	1928
Braddy, Wade Hampton, Burlington; Univ. of N. C., 1909	1909	1913
Brooks, R. E., Burlington; Jeff. Med. Coll., 1920; U.N.C.	1920	1922
Carlyle, J. B., Burlington; Jeff. Med. Coll., 1926; U.N.C.	1926	1928
Carrington, G. L., Burlington; Johns Hopkins, 1920; U.N.C.	1920	1925
Cook, W. E., Mebane	.....	1934
Ellington, A. J., Burlington; Columbia Univ., 1915	1915	1917
Goley, Willard Coe, Graham; Univ. of Pa., 1924; U.N.C.	1924	1924
Gwyn, H. L., Yanceyville; Med. Coll. Va., 1923	1923	1925
Harden, Graham, Burlington; Univ. of Pa., 1919	1920	1922
Johnson, Jos. L., Graham; Jeff. Med. Coll., 1926	1926	1930
McDade, B. B., Burlington; Univ. of Md., 1918; U.N.C.	1918	1920
McPherson, C. W., Burlington; Univ. of Md., 1910; U.N.C.	1910	1912
McPherson, R. G., Saxapahaw; Univ. of N. C., 1908	1908	1909
Malloy, S. A., Yanceyville, (Hon.); Ky. School Med., 1897	1898	1903
Moore, Henry Blanchard, Graham; Jeff. Med. Coll., 1920	1920	1923
Pickett, J. A., Burlington, R.F.D., 1, (Hon.); Univ. of Tenn., Coll. of Med., 1894	1894	1904
Robinson, D. E., Burlington; Harvard Med. Coll., 1927	1929	1930
Scott, S. F., Union Ridge; Univ. of Pa., 1918; U.N.C.	1918	1920
Simpson, H. H., Altamahaw; Univ. of Md., 1925	1925	1926
Smith, F. L., Burlington; Univ. of Pittsburg, 1927	1927	1928
Spoon, S. C., Burlington; Univ. of Md., 1918; U.N.C.	1918	1920
Troxler, R. M., Burlington; Univ. of Md., 1914	1914	1915
Tyson, T. D., Mebane; Univ. Coll. of Med., Richmond, 1899	1899	1904
Walker, J. B., Burlington; Med. Coll. Va., 1914; U.N.C.	1914	1916
Walters, C. M., Burlington; Univ. of Md. and P. and S., Balt., 1908; U.N.C.	1908	1909
Warren, R. F., Prospect Hill; Atlanta School of Med., 1911	1911	1919
Wilkins, J. C., Haw River; Univ. of Md., 1911; U.N.C.	1911	1920

ANSON COUNTY SOCIETY

President: Chas. I. Allen, Wadesboro; Columbia Univ. Coll. P. and S., 1913	1913	1922
Secretary: F. Y. Sorrell, Wadesboro; Jeff. Med. Coll., 1930	1930	1933
Bennett, Jos. H., Wadesboro; Univ. of Md., 1894	1894	1904
Covington, J. M., Wadesboro; Med. Coll of S. C., 1874; U.N.C.	1879	1879

Name and Address	Licensed	Joined State Society
Davis, J. M.. Wadesboro; Columbia Univ., 1913	1913	1920
Lubchenko, N. E., Ansonville; N. C. Med. Coll., 1915	1915	1916
McGoogan, Benj. J., Morven; Univ. of Md., 1912; U.N.C	1912	1923

AVERY COUNTY SOCIETY

President: R. H. Hardin, Banner Elk; N. C. Med. Coll., 1914	1914	1919
Secretary: B. B. McGuire, Newland; Jeff. Med. Coll., 1918; U.N.C.	1919	1928
Burleson, W. B., Plumtree; Univ. Md., 1915; U.N.C	1915	1916
Sloop, Eustace H., Crossnore; N. C. Med. Coll., 1905; Jeff. Med. Coll., 1908	1905	1909
Tate, W. C., Banner Elk; Tenn. Med. Coll., 1908	1909	1912

BEAUFORT COUNTY SOCIETY

President: J. C. Rodman, Washington, (Hon.); Bellevue Med. Coll., 1892	1892	1895
Secretary: D. E. Ford, Washington; Univ. of Mich., 1908	1925	1924
Bonner, J. B., Aurora; Univ. of Md. School of Med. and Coll. P. and S., 1918; U.N.C	1918	1920
Carter, H. W., Washington; Univ. of Va., 1895; U.N.C	1895	1910
Kluttz, DeWitt, Washington; Univ. of Pa., 1918; U.N.C	1919	1921
Mariner, N. B., Belhaven; Univ. Coll. of Med., Va., 1903	1903	1903
Nicholson, P. A., Washington, (Hon.); P. and S., Balt., 1889	1889	1890
Phelps, J. M., Washington; Jeff. Med., 1932	1932	1935
Pinkerton, F. C., Washington; Univ. Va., 1928	1930	1931
Ramsey, Jas. G., Washington; Univ. of Penna., 1922; U.N.C	1924	1924
Stiles, C. D., Washington; Emory Univ. Med., 1928	1934	1935
Swindell, Lewis H., Washington; Univ. of Pa., 1916; U. N. C	1916	1919
Tayloe, John Cotton, Washington; Univ. of Pa., 1922; U.N.C	1924	1925
Tayloe, Joshua, Jr., Washington; Univ. of Pa., 1923; U.N.C	1923	1926
Winstead, E. G., Belhaven; Med. Coll. Va., 1929	1929	1930

BERTIE COUNTY SOCIETY

President: Frank H. Garris, Lewiston; Jeff. Med. Coll., 1912	1912	1918
Secretary: S. A. Saunders, Aulander; Jeff. Med. Coll., 1914; U.N.C.	1914	1918
Block, Milton E., Windsor; Tulane Univ., 1933	1933	1935
Castelloe, Cola, Windsor; Univ. of Pa., 1917; U.N.C	1917	1926
Credle, C. S., Colerain; Med. Coll. of Va., 1932	1932	1935
Evans, L. B., Windsor; Univ. Coll. of Med., 1900, U.N.C	1900	1907
Lyon, Henry Wise, Windsor; Univ. of Pa. Sch. of Med., 1918; U.N.C.	1919	1920
Norfleet, E. P., Roxobel; Va. Med. Coll., 1914	1914	1920
Saunders, John Rudolph, Lewiston; Emory Univ., 1926	1926	1931
Sawyer, Charles Judson, Windsor, (Hon.); P. and S., Balt., 1895	1895	1897
Smith, Jos. Elmer, Windsor; Med. Coll. of Va., 1921	1921	1922

BLADEN COUNTY SOCIETY

President:	.....	.....
Secretary: E. S. Clark, Clarkton; Med. Coll. of Va., 1914	1914	1915
Bennett, E. C., Elizabethtown; Med. Coll. of Va., 1926	1926	1927
Bridger, D. H., Bladenboro; Jeff. Med. Coll., 1922	1922	1925
Clark, D. D., Clarkton; Med. Coll. of Va., 1917	1917	1920
Hutchinson, S. S., Bladenboro; N. C. Med. Coll., 1911	1911	1917
Singletary, G. C., Clarkton; Univ. of Pa. School of Med., 1917; U.N.C.	1917	1918

BRUNSWICK COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Dosher, J. Arthur, Southport	.....	.....
Dosher, Wm. S., Southport	.....	1934
Goley, Wm. R., Shallotte; Univ. Coll. of Med., Richmond, 1901	1901	1904

BUNCOMBE COUNTY SOCIETY

President: L. M. Griffith, Asheville; Johns Hopkins, 1915	1916	1917
Secretary: M. S. Broun, Asheville; Columbia University Coll. of P. S., 1919	1922	1923
Adams, J. L., Asheville; Jeff. Med. Coll., 1910	1910	1913
Aicher, Isaac J., Black Mountain; Northwestern Univ. Med. School, 1896	1905	1907
Ambler, Arthur C., Asheville; Jeff. Med. Coll., 1920	1921	1922
Baier, Geo. F., Jr., W. Asheville; Hahnemann Med. Coll., 1906	1920	1930
Baker, W. E., Arden; Chattanooga Med. Coll., 1908; U.N.C.	1915	1916
Beall, L. G., Black Mountain; N. C. Med. Coll., 1906; Univ. of Pa., 1911	1906	1912
Beers, David L., Asheville; Univ. Mich., 1925	1928	1929
Blumberg, Alfred, Oteen; Sch. Med. Univ. of Colo., 1923	1928	1929
Brewton, W. A., Enka; Univ. of Pa., 1927	1927	1929
Brookshire, Harley G., Asheville; N. C. Med. Coll., 1905	1905	1907
Brownsberger, Ethel, Biltmore; Coll. of Med. Evangelists, 1927	1933	1934
Brownsberger, John F., Biltmore; Coll. of Med. Evan., Los Angeles, 1925	1928	1929
Buckner, J. M., Swannanoa; Univ. N. C., 1909	1909	1912
Briggs, Henry H., Jr., Asheville; Yale, 1931	1933	1934
Brown, Kermit E., Asheville; Jeff. Med., 1927	1927	1930
Carr, Eugene M., Asheville; Johns Hopkins Univ., 1919	1926	1927
Cheesborough, Thomas P., Biltmore, (Hon.); Univ. of N. Y., 1891	1891	1900
Clark, Harold S., Asheville; Univ. of Pa., 1922; U.N.C.	1922	1924
Cocke, C. H., Asheville; Cornell Univ., 1905	1912	1913
Cocke, E. R., Asheville; Jeff. Med. Coll., 1913; U.N.C.	1914	1917
Cocke, Jere E., Asheville; Louisville Med. Coll., 1905	1905	1907
Colby, C. deW., Asheville; Univ. of Mich., 1892; Army Med. School, 1895	1909	1912
Cotten, Clyde E., Asheville, (Hon.); Univ. of Wooster, 1889	1901	1901
Crow, S. L., Asheville; Emory Univ., 1925	1926	1927
Crump, Curtis, Asheville; Harvard, 1926	1933	1934
Craddock, Alva B., Asheville; Johns Hopkins, 1918	1923	1924
Deyton, John W., Asheville; Rush Med. Coll., 1928	.....	1931
Eckel, O. F., Asheville; Med. Coll. of S. C., 1906	1907	1909
Edwards, B. O., Asheville; N. C. Medical Coll., 1905	1905	1909
Elias, Lewis W., Asheville; Columbia Univ. Coll. of P. and S., 1903	1906	1907
Floyd, H. T., Batavia, N. Y.; Johns Hopkins Univ., 1923	1926	1927
Fox, Robt. Eugene, Asheville; Univ. of Pa., 1926	1926	1929
Freeman, Wm. T., Biltmore; Univ. of Ga., 1917	1927	1929
Gaskins, C. W., Asheville; Univ. of Tenn., 1932	1933	1934
Godwin, G. C., Oteen; Med. Coll. Va., 1915	1915	1920
Grantham, Wm. L., Asheville; N. C. Med. Coll., 1906	1906	1911
Greene, Jos. B., Asheville; Univ. of Va., 1893	1910	1911
Greenwood, A. B., Asheville; Johns Hopkins, 1916; U.N.C.	1916	1918

Name and Address	Licensed	Joined State Society
Griffin, M. A., Asheville; Jeff. Med. Coll., 1917; U.N.C.	1917	1918
Griffin, W. R., Asheville; Jeff. Med. Coll., 1910	1910	1917
Griffith, F. W., Asheville; Johns Hopkins, 1906	1911	1912
Harrison, H. H., Asheville; Jeff. Med. Coll., 1905; U.N.C.	1905	1918
Henderson, Irma C., Asheville; Tulane Univ., 1933	1934	1935
Hensley, Chas A., Asheville; Jeff. Med. Coll., 1917	1917	1927
Herbert, Wm. P., Asheville; Univ. of Va., 1907	1910	1911
Hollyday, W. M., Asheville; Univ. of Maryland, 1908	1914	1915
Huffines, T. R., Asheville; Indiana Univ. Med. School, 1919	1922	1923
Huston, Jno. Walter, Asheville; Rush Med. Coll., 1904	1912	1913
Hipps, A. G. T., Asheville; Jeff. Med. Coll., 1916	1916	1920
Ingersoll, Louise M., Asheville; Woman's Med. Coll., 1914	1925	1927
Ivey, R. R., U. S. P. H. S., Biltmore; Univ. of Ala., 1909	1921	1921
Johnson, Walter R., Asheville; Univ. Minnesota, 1924	1933	1934
Jones, Catesby, Asheville; Univ. of Md., 1893	1931	1932
King, Edward, 1060 Park Ave., New York, N. Y.; Harvard Med. Sch., 1917	1921	1922
Kutscher, G. W., Jr., Swannanoa; Univ. of Pittsburgh, 1923	1925	1926
Lindberg, O. S., Candler; Coll. of Med., Evangelists, Los Angeles, Cal., 1923	1925	1928
Lord, Marjery J., Montreat; Univ. of Mich., 1916	1918	1918
Lott, Wm. C., Asheville; Univ. of Colo., 1929	1930	1931
Lynch, J. M., Asheville; Univ. of Md., 1904; U.N.C.	1912	1913
MacRae, J. D., Jr., Asheville; Univ. of Pa. Med. School, 1927; U.N.C.	1927	1930
McCall, A. C., Asheville; Univ. of Md., 1910	1910	1912
McCracken, C. M., Fairview, (Hon.); N. C. Med. Coll., 1896	1896	1904
Matros, Nathaniel H., Oteen; Marquette Univ., 1930	1933	1934
Mears, George A., Asheville; Med. Coll. Syracuse Univ., 1924	1924	1927
Montgomery, Kenneth E., Asheville; Univ. Louisville, 1917	1920	1920
Moore, Julian A., Asheville; Univ. of Pa., 1918; U.N.C.	1918	1921
Morgan, B. E., Asheville; Univ. of Tenn., 1917	1921	1921
Murphy, Gibbons W., Asheville; Emory Univ., 1923	1923	1927
Millander, Chas. W., Asheville; Tulane Univ., 1919	1921	1924
Morgan, G. A., Asheville; Univ. of Tenn., 1917	1920	1925
Norburn, Chas. S., Asheville; Univ. of Va., 1917; U.N.C.	1921	1924
Norburn, R. L., Asheville; Vanderbilt Univ., 1925	1925	1927
Orr, Chas. C., Asheville; Univ. of Md., 1904; U.N.C.	1904	1905
Orr, P. B., Asheville, (Hon.); Jeff. Med. Coll., 1901; U.N.C.	1901	1904
Parker, Geo. F., Asheville; Univ. of Pa., 1923; U.N.C.	1924	1926
Pendleton, Wilson, Asheville; Univ. of Va., 1908	1919	1920
Pritchard, G. L., Black Mountain; Univ. Coll. of Med., Richmond, 1913	1913	1926
Quinn, David E., Oteen; Geo. Wash. Univ., 1930	1933	1934
Reeves, R. J., Leicester; Vanderbilt Univ., 1913	1913	1922
Reynolds, C. V., Raleigh, (Hon.); Univ. of N. Y., 1895	1895	1896
Ringer, Paul H., Asheville; Columbia Univ. P. and S., N. Y., 1904	1906	1907
Roberts, Roy F., Asheville; Tulane Univ., 1933	1933	1935
Russell, W. M., Asheville; Univ. of Cincinnati, 1928	1931	1932
Rich, J. C., Candler; Univ. of Nashville, 1908	1908	1931
Saunders, John T., Asheville; Columbia Univ., 1926	1934	1935
Schaffle, Karl, Asheville; Univ. of Pa., 1907	1926	1927
Schoenheit, E. W., Asheville; Jeff. Med. Coll., 1920	1920	1921
Scott, R. C., Asheville; Jeff. Med. Coll., 1902	1916	1919
Sevier, J. T., Asheville, (Hon.); Jeff. Med. Coll., 1895	1895	1899

Name and Address	Licensed	Joined State Society
Shuford, Mary Frances, Asheville; Rush Med. Coll., 1934	1934	1935
Smith, B. R., Asheville; Jeff. Med. Coll., 1911	1913	1914
Sprinkle, C. N., Weaverville; Jeff. Med. Coll., 1910; U.N.C.	1910	1922
Stevens, M. L., Asheville, (Hon.); Balt. Med. Coll., 1891	1892	1893
Sumner, Howard L., Asheville; Jeff. Med. Coll.; U.N.C.	1926	1929
Swann, C. C., Asheville; Tulane Univ., 1926	1930	1931
Sigmund, Wm. B., Asheville; Univ. Louisville, 1933	1934	1935
Tennett, G. S., Asheville, (Hon.); N. C. Med. Coll., 1894	1894	1898
Terry, George H. B., Oteen; Jeff. Med. Coll., 1895	1925	1927
Watkins, John A., Asheville; Tulane University, 1910	1925	1926
Ward, John LaB., Asheville; Med. Coll. of S. C., 1905	1921	1922
Weaver, H. B., Asheville, (Hon.); Washington Univ., 1872	1881	1882
Weaver, W. J., (Hon.), Asheville; Jeff. Med. Coll., 1898; U.N.C.	1897	1913
Weizenblatt, Sprinza, Asheville; Vienniese Univ. of Med., 1922	1929	1931
Westcott, W. E., Candler; Coll. Med. Evangelists, 1926	1930	1932
White, R. A., Asheville; Univ. Cin. Coll. of Med., 1918	1920	1921
Whitehead, S. L., Asheville; Jefferson Med. Coll., 1921	1921	1929
Williams, John W., Asheville; Univ. of Md., 1906	1906	1906
Williams, L. L., Asheville; Med. Coll. of S. C., 1880	1924	1927
Willis, A. P., Candler; Univ. of N. C., 1907	1904	1919
Wilson, R. B., Asheville; Univ. of Louisville, 1931	1931	1933
Woodward, J. G., Asheville; Univ. of Pa., 1925; U.N.C.	1925	1927
Worley, J. H., Asheville; Univ. of Tenn., 1931	1934	1935
Young, J. C., Asheville; Univ. of Tenn., 1926	1926	1929

BURKE COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Billings, G. M., Morganton; Tulane Univ. of La., 1919	1919	1920
Helms, J. B., Morganton; Univ. of Pa., 1928	1928	1931
Kibler, W. H., Morganton; Univ. of Pa., 1914	1914	1918
Kende, T. Norbert, Northport, L. I., N. Y.; Royal Hungarian Univ., Budapest, Hungary, 1922	1927	1928
Long, R. H., Morganton; Jeff. Med. Coll., 1916	1916	1923
McCampbell, John, Morganton, (Hon.); Balt. Med. Coll., 1894	1895	1899
Palmer, Yates S., Valdese; Med. Coll. Va., 1931	1931	1933
Taylor, E. H. E., Morganton; Tulane Univ., La., 1924	1924	1925
Vernon, Jas. W., Morganton; Jeff. Med. Coll., 1909	1909	1913
Watkins, F. B., Morganton; Jeff. Med. Coll., 1907	1907	1910

CABARRUS COUNTY SOCIETY

President: M. A. Widenhouse, Concord; Univ. of Cinn., 1925	1926	1927
Secretary: Rae Morris, Concord	.....	1932
Bowman, C. R., Kannapolis; Med. Coll. Va., 1928	1929	1930
Brandon, W. O., Concord; Med. Coll. Va., 1928	1929	1932
Burns, J. E., Concord; Med. Coll. of Va., 1923	1923	1927
Bunn, J. J., Mt. Pleasant; N. C. Med. Coll., 1912	1913	1915
Caldwell, D. G., Concord; Univ. of Pa., 1923; U.N.C.	1925	1925
Gouger, Geo. J., Concord, (Hon.); Univ. of Md., 1891	1891	1899
Howard, J. R., Concord; Med. Coll. of Va., 1924	1924	1925
Ketner, Fred Y., Concord; Med. Coll. of Va., 1928	1929	1930
King, Richard M., Concord; Jeff. Med. Coll., 1903	1903	1907

Name and Address	Licensed	Joined State Society
MacFayden, Paul R., Concord; Univ. Coll of Med., Richmond, 1901; U.N.C.	1901	1904
MacFayden, Paul R., Jr., Concord; Univ. of Va., 1929; U.N.C.	1929	1932
Misenheimer, E. A., Concord; Univ. of Md., 1926	1927	1928
Rankin, R. B., Concord; Tulane Univ. of La., 1917; U.N.C.	1920	1922
Robinson, E. E., Kannapolis; Med. Coll. of Va., 1927	1927	1929
Scruggs, W. H., Concord; Univ. of Md., 1913	1915	1917
Smoot, J. E., Concord, (Hon.); Balt. Med. Coll., 1893	1894	1902
Sossoman, J. C., Midland; N. C. Med. Coll., 1915	1917	1918
Whicker, Guy L., Kannapolis; Univ. of Md., 1926	1926	1928
Yow, I. A., Concord; N. C. Med. Coll., 1906	1906	1910

CALDWELL COUNTY SOCIETY

President: Frederick M. Dula, Lenoir; Vanderbilt	1934	1934
Secretary: Douglas Hamer, Jr., Lenoir; Med. Coll. of S. C.; U.N.C.	1927	1929
Beach, W. R., Hudson; Emory Univ., 1934	1934	1935
Blackwelder, Verne H., Lenoir; U.N.C.	.....	1931
Goodman, A. B., Lenoir, (Hon.); N. C. Med., 1898	1897	1904
Hedrick, Clyde R., Lenoir; Georgetown Med. Sch., 1925; U.N.C.	1925	1926
Houck, Albert, Lenoir, (Hon.); P. and S., Balt., 1884	1891	1893
Kent, Alfred A., Winter Pk., Fla., (Hon.); Jeff. Med. Coll., 1885	1885	1894
Kent, Alfred A., Jr., Granite Falls; Univ. of Pa.; U.N.C.	1934	1934
McNairy, Caroline, Lenoir; Woman's Med. Coll. Pa., 1917	1917	1919
Rudisill, J. D., Lenoir; Univ. of Md., 1922	1922	1923
Russell, C. R., Granite Falls; Univ. Coll. of Med., Richmond, 1909; U.N.C.	1909	1918

CARTERET COUNTY SOCIETY

President: S. W. Thompson, Jr., Morehead City; Med. Coll. Va., 1913; U.N.C.	1915	1922
Secretary: K. P. B. Bonner, Morehead City (Hon.); Med. Coll. of Va., 1905	1905	1905
Chadwick, W. S., Beaufort; Univ. of Va., 1928	1928	1930
Davis, George, Beaufort; Kentucky School of Med., 1894	1896	1904
Ferebee, C. G., Morehead City; Med. Coll. of Va., 1902	1904	1904
Hyde, Francis Edward, Beaufort; West Res. Univ., 1920	1925	1926
Lewis, C. W., Beaufort; Med. Coll. of Va., 1930	1930	1931
Mason, Manly, Newport; Tulane University; 1924; U.N.C.	1924	1925
Maxwell, C. S., Beaufort; Univ. of the South, Sewanee, 1900	1899	1904
Moore, L. W., Beaufort	.....	1933
Royal, Ben F., Morehead City; Jeff. Med. Coll., 1909; U.N.C.	1909	1909

CATAWBA COUNTY SOCIETY

President:	.....	.....
Secretary: Robt. T. Hambrick, Hickory; Univ. of Tulane, 1923; U.N.C.	1923	1924
Craft, C. C., Hickory; Grad. Geo. Wash. Univ., 1909	1909	1930
Edgerton, G. S., Hickory; U.N.C. Med., 1930; Temple Univ., 1932	1932	1934
Fresh, W. M., Hickory	.....	1919
Fritz, William A., Hickory; Temple Univ., 1933	1933	1934
Frye, Glenn R., Hickory; Jeff. Med. Coll., 1921; U.N.C.	1921	1923
Griffin, H. W., Hickory; Emory Univ., 1923	1931	1932
Hunsucker, Chas. R., Hickory; N. C. Med. Coll., 1913	1913	1915

Name and Address	Licensed	Joined State Society
Keever, James W., Hickory	.....	1930
Klutz, A. F., Maiden; Jeff. Med. Coll., 1917	1917	1920
Lewis, J. S., Hickory; Med. Coll. of S. C., 1925	1927	1932
Long, Glenn, Newton; N. C. Med. Coll., 1912	1912	1915
Menzies, H. C., Hickory, (Hon.); N. C. Med. Coll., 1894	1894	1899
Norman, J. S., Hickory; P. and S., Balt., 1909	1911	1920
Nowell, S. C., Hickory; Univ. of Pa., 1921; U.N.C.	1922	1924
Price, K. A., Hickory; Univ. of Va., 1907	1907	1909

CHATHAM COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Camp, Horton, Pittsboro; Northwestern Univ., 1932	1933	1935
Edwards, J. D., Siler City, (Hon.); Louisville Med. Coll., 1887	.....	1894

CHEROKEE COUNTY SOCIETY

President: N. B. Adams, Murphy; Tenn. Med. Coll., 1896; U.N.C.	1909	1909
Secretary: Edw. E. Adams, Murphy; Jeff. Med. Coll., 1923	1923	1924
Hill, J. N., Murphy; Univ. of Louisville, 1909	1909	1909
Herbert, Fred L., Andrews; Tenn. Med. Coll., 1904	1912	1912
Orr, C. V., Andrews; Atlanta Sch. of Med., 1909	1909	1909
Petrie, Robt. Wm., Murphy, (Hon.); Univ. of Md., 1903	1903	1903
Webb, B. G., Andrews, (Hon.); Louisville Med. Coll., 1885	1885	1885
Young, G. McD., Postell; Lincoln Mem. Univ., 1916	1917	1918

CHOWAN-PERQUIMANS COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Davenport, C. A., Hertford; Univ. of Med., 1924; U.N.C.	1924	1926
Newby, G. E., Hertford; Jeff. Med. Coll., 1900; U.N.C.	1901	1916
Powell, Jesse A., Edenton; Coll. of P. and S., Balt., 1907	1908	1909
Whichard, M. P., Edenton; Univ. of Md., 1910; U.N.C.	1910	1918
Williams, L. P., Edenton; Bellevue Med. Coll., 1918	1919	1921

CLEVELAND COUNTY SOCIETY

President: D. T. Bridges, Lattimore; Emory Univ., 1926	1926	1927
Secretary: B. H. Kendall, Shelby; Univ. of Md., 1929; U.N.C.	1929	1931
Aydlette, Jos. P., Earl, (Hon.); Ky. Univ., 1901	1903	1903
Ellis, R. C., Shelby, (Hon.); Balt. Univ. Med. School, 1886	1889*	1891
Falls, Fred, Lawndale; Tulane, 1930	1930	1933
Gibbs, E. W., Shelby; Univ. of N. C., 1907	1907	1918
Gold, Ben, Shelby; Univ. of Md., 1920; U.N.C.	1920	1922
Gold, T. B., Shelby; N. C. Med. Coll., 1911	1911	1915
Harbison, J. W., Shelby; Johns Hopkins, 1919; U.N.C.	1919	1924
Houser, E. A., Shelby, (Hon.); Chattanooga Med. Coll., 1898; Balt. Univ., 1902	1902	1904
Lackey, W. J., Fallston; Va. Medical College, 1928	1928	1929
Lattimore, E. B., Shelby, (Hon.); Bellevue Med. Coll., 1897	1896	1904
Lee, Lawrence V., Lattimore, (Hon.); Emory Univ. School of Med., 1894	1897	1904
Matthews, B. B., Shelby; Med. Coll. of S. C.	1927	1929

* Registered.

Name and Address	Licensed	Joined State Society
Moore, D. F., Shelby; Jeff. Med. Coll., 1925	1925	1927
Oates, George, Grover; Univ. of Louisville, 1894	1902	1904
Parker, S. F., Shelby; Med. Coll. of Va., 1929	1929	1931
Ramseur, W. L., Kings Mountain; Med. Coll. of S. C., 1926	1927	1929
Royster, S. S., Shelby, (Hon.); Tenn. Med. Coll., 1891	1896	1904
Schenk, Sam M., Shelby; Univ. of Pa., 1923; U.N.C.	1923	1926
Thompson, H. C., Shelby; Tulane Univ., 1930; U.N.C.	1931	1932
Wood, J. W., Boiling Springs, (Hon.); Louisville Med. Coll., 1892	1901*	1900

COLUMBUS COUNTY SOCIETY

President: J. N. Dawson, Bolton; Med. Coll. of Va., 1932	1932	1934
Secretary: Floyd Johnson, Whiteville; Memphis Hosp. Med. Coll., 1903	1903	1904
Cox, G. S., Tabor; N. C. Med. Coll., 1911	1911	1914
Floyd, L. D., Fair Bluff; N. C. Med. Coll., 1911	1911	1912
Formyduval, T., Whiteville; Med. Coll. of Va., 1919	1920	1922
Moore, T. V., Delco; Balt. Med. Coll., 1901	1901	1911
Sadler, R. C., Whiteville; N. C. Med. Coll., 1912	1912	1915
Smith, W. F., Chadbourn; N. C. Med. Coll., 1904	1904	1905
Smith, Slade A., Whiteville; N. C. Med. Coll., 1907	1907	1921
Whitaker, R. B., Whiteville; Univ. Coll. of Med., Richmond, 1912	1912	1913
Williams, William N., Tabor; Med. Coll. of Va., 1924	1924	1925

CRAVEN COUNTY SOCIETY

President: Christopher S. Barker, New Bern; Jeff. Med. Coll., 1909	1909	1924
Secretary: Chas. Hall Ashford, New Bern; Johns Hopkins, 1927	.....	1931
Daniels, R. L., New Bern; Med. Coll. of Va., 1912	1912	1919
Duffy, R. N., New Bern; Johns Hopkins, 1906	1907	1908
Duffy, Charles, New Bern; Jeff. Med. Coll., 1930	.....	1935
Duguid, Jos. W., Dover; N. C. Med. Coll., 1905; U.N.C.	1906	1912
Jones, R. Duval, New Bern; Univ. of Md., 1896; U.N.C.	1897	1897
Latham, Joseph R., New Bern; Jeff. Med. Coll., 1917	1917	1923
Patterson, Joseph F., New Bern; Jeff. Med. Coll., 1906	1906	1906
Wadsworth, H. B., New Bern; Johns Hopkins, 1918	1918	1923

CUMBERLAND COUNTY SOCIETY

President:	.....	.....
Secretary: J. N. Robertson, Fayetteville; Med. Coll. of Va., 1923	1923	1924
Allgood, R. A., Fayetteville; Univ. of Md. and Coll. of P. and S., Balt., 1912	1915	1917
Ashcraft, J. E., Fayetteville, (Hon.); Univ. of N. Y., 1887	1887	1890
Averitt, K. G., Cedar Creek, (Hon.); Balt. Med. Coll., 1893	1893	1902
Bullock, Thomas C., Autryville, (Hon.); P. and S., Balt., 1885	1885	1886
Currie, D. S., Parkton; N. C. Med. Coll., 1906	1906	1907
Foster, M. T., Fayetteville; Emory Univ., 1927	1927	1930
Gainey, John W., Fayetteville; Jeff. Med. Coll., 1917; U.N.C.	1917	1921
Highsmith, J. D., Fayetteville; Jeff. Med. Coll., 1918	1918	1920
Highsmith, J. F., Fayetteville, (Hon.); Jeff. Med. Coll., 1889	1889	1893
Highsmith, J. F., Jr., Fayetteville; Univ. of Pa., 1927	1927	1929
Highsmith, Seavy, Fayetteville, (Hon.); Univ. Coll. of Med., Richmond, 1901	1901	1902

* Registered.

Name and Address	Licensed	Joined State Society
Highsmith, W. C., Fayetteville; Univ. of Cincinnati, 1931; U.N.C.	1930	1932
Jordan, Wm. S., Fayetteville; Univ. of N. C., 1906	1906	1907
Lilly, James M., Fayetteville, (Hon.); Univ. Coll. of Med., Richmond, 1903; U.N.C.	1903	1904
McFayden, O. L., Fayetteville; N. C. Med. Coll., 1912	1912	1912
McKay, W. P., Fayetteville; Tulane Univ., 1916; U.N.C.	1916	1921
McLeod, J. H., Fayetteville	.....	1929
Olive, P. W., Fayetteville; P. and S., Balt., 1907	1907	1909
Owen, D. S., Fayetteville; Univ. of Md., 1930	1930	1933
Parker, W. T., Fayetteville; Med. Coll. of S. C., 1928	1931	1933
Phillips, E. N., Hope Mills; Med. Coll. of Va., 1930	1930	1935
Pittman, R. L., Fayetteville; Jeff. Med. Coll., 1910; U.N.C.	1910	1912
Pittman, W. A., Fayetteville; Temple Univ., 1932	.....	1934
Rainey, W. T., Fayetteville; Univ. Coll. of Med., Richmond, 1913	1913	1916
Shaw, J. A., Fayetteville; Univ. Pa., 1923; U.N.C.	1923	1926
Verdery, W. C., Fayetteville; Univ. of Ga., 1915	1920	1921

DAVIDSON COUNTY SOCIETY

President:	.....	.....
Secretary: Jean Craven, Lexington; Johns Hopkins, 1930	1933	1935
Alexander, G. T., Thomasville; Emory Univ., 1922	1933	1934
Andrews, John M., Lexington; N. Y. Univ. and Bellevue Hosp. Med. Coll., 1932; U.N.C.	1932	1934
Cathell, E. J., Lexington; Emory Univ., 1930	1930	1932
Clyatt, Claude Eugene, Denton; Univ. of Ga., 1911	1923	1924
Craven, Erle, Lexington; Johns Hopkins Med., 1929	1932	1935
Farrington, R. K., Thomasville; Univ. Cin., 1925; U.N.C.	1925	1927
Gambrell, Grover C., Lexington; Univ. of Ga., 1912	1923	1924
Hunt, W. Bryce, Lexington; Univ. of Md., 1923	1923	1924
Jennings, R. G., Thomasville; N. C. Med. Coll., 1913	1913	1920
Lancaster, F. J., Lexington; Jeff. Med. Coll., 1922	1922	1924
Leonard, J. C., Jr., Lexington; Jeff., 1928	1928	1931
Mock, Frank Lowe, Lexington, Rt. 3; N. C. Med. Coll., 1908	1908	1911
Phillips, C. H., Thomasville; Balt. Univ. School of Med., 1892	1893	1911
Plummer, R. E., Denton	.....	1935
Redwine, J. Dan, Lexington; Emory Univ., 1931	1931	1934
Sharpe, C. R., Lexington; Jeff. Med. Coll., 1914	1914	1917
Smith, J. A., Lexington; N. C. Med. Coll., 1915	1915	1917
Smith, William Gordon, Thomasville; Tulane Univ., 1927; U.N.C.	1927	1928
Terry, J. R., Lexington; Univ. of Louisville, 1911	1912	1912
Vestal, Willis J., Lexington, (Hon.); P. and S., Balt., 1883	1889*	1893
Yokeley, R. V., Thomasville; N. C. Med. Coll., 1911	1911	1912
Zimmerman, Robert U., Welcome; N. C. Med. Coll., 1901	1901	1904

DAVIE COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Byerly, A. B., Cooleemee, (Hon.); Univ. College of Med., Richmond, 1896; U.N.C.	1896	1904

DUPLIN COUNTY SOCIETY

President:	.....	.....
Secretary: C. H. White, Kenansville	.....	1935

* Registered.

Name and Address	Licensed	Joined State Society
Carr, Ransom Lee, Rose Hill; Balt. Med. Coll., 1907	1908	1909
Farrior, J. W., Warsaw; Univ. of Pa., 1912	1913	1917
Gooding, G. V., Kenansville	.....	1931
Landen, J. F., Chinquapin; Univ. Coll. of Med., Richmond, 1905	1905	1907
Morton, J. X., Faison; N. C. Med. Coll., 1915	1915	1922
Robinson, J. D., Wallace; Univ. of Md., 1915	1915	1917
Straughan, J. W., Warsaw; Med. Coll. of Va., 1924	1924	1925
Williams, Jas. M., Warsaw; Univ. of Md., 1902	1902	1902

DURHAM-ORANGE COUNTIES SOCIETY

President: W. B. Anderson, Durham, Johns Hopkins, 1924	1927	1927
Secretary: Annie T. Smith, Durham; Univ. of Ill., 1923; U.N.C.	1925	1926
Alyea, Edwin P., Durham; Johns Hopkins Med. Sch., 1923	1930	1930
Berryhill, Walter Reece, Chapel Hill; Harvard Med. Sch., 1927; U.N.C.	1928	1934
Bitting, Numa D., Durham; Jeff. Med. Coll., 1907; U.N.C.	1907	1909
Booker, Lyle S., Durham; Va. Univ. Med. Coll., 1908	1910	1911
Boone, W. H., Durham, (Hon.); N. C. Med. Coll., 1902	1902	1910
Boone, W. W., Durham; Jeff. Med. Coll., 1923; U.N.C.	1923	1925
Bowles, Francis N., Durham; Med. Coll. of Va., 1924	1924	1926
Bowling, Jackson Murrell, Durham; Med. Coll. of Va., 1931	1931	1934
Brinkley, H. M., Durham; Jeff. Med. Coll., 1919; U.N.C.	1919	1923
Brooks, B. U., Durham; Univ. of Md., 1905	1905	1907
Bullitt, J. B., Chapel Hill; Univ. of Va., 1897	1914	1915
Byrnes, Thomas H., Durham; Med. Coll. of S. C., 1926	1932	1932
Campbell, A. S., Durham; Chicago Coll. Med. and Surg., 1917	1923	1924
Carter, Bayard, Durham; Johns Hopkins, 1925	1925	1931
Cedaka, Emil Bogonir, Durham; Johns Hopkins, 1929	1934	1934
Cooper, A. Derwin, Durham; Geo. Washington Univ., 1931	1933	1934
Coppridge, W. M., Durham; Jeff. Med. Coll., 1918; U.N.C.	1919	1920
Crispell, R. S., Durham; Cornell Univ., 1920	1933	1934
Davison, Wilburt C., Durham; Johns Hopkins, 1917	1927	1927
Eagle, Watt W., Durham; Johns Hopkins, 1925	1929	1930
Fassett, Burton W., Durham; Balt. Med. Coll., 1898	1899	1909
Felts, Robert L., Durham; Univ. of Md., 1898	1899	1909
Fields, Leonard E., Chapel Hill; Univ. of Pa., 1929; U.N.C.	1929	1931
Forrest, D. E., Hillsboro; Univ. of Md., 1930; U.N.C.	1930	1933
Frink, H. W., Chapel Hill; Cornell Univ. Med. Coll., 1905	1926	1935
Gardner, Clarence E., Jr., Durham; Johns Hopkins, 1928	1932	1932
Goudge, Mabel E., West Durham; Ohio State Univ., 1922	1925	1927
Hamblen, E. C., Durham; Univ. of Va., 1928	1931	1931
Hanes, F. M., Durham; Johns Hopkins, 1908	1916	1917
Hansen-Pruss, O. C. E., Durham; Johns Hopkins, 1924	1930	1931
Hardee, W. P., Durham; Jeff. Med. Coll., 1912; U.N.C.	1912	1924
Hart, Deryl, Durham; Johns Hopkins, 1921	1929	1930
Hayes, R. B., Hillsboro; Univ. of Md., 1906	1910	1917
Haywood, C. L., Jr., Durham; Harvard, 1927	1929	1930
Hedgpeth, E. McG., Chapel Hill; Univ. of Penn., 1931	1931	1934
Heinitsh, George, Durham; U.N.C. and Duke Univ., 1932	1932	1935
Hicks, Calvin C., Durham, (Hon.); Univ. of Md., 1904	1904	1904
Holloway, Joseph C., Durham; Tulane Univ., 1927; U.N.C.	1927	1929
Holloway, Robert Lee, W. Durham, (Hon.); Med. Coll. of Va., 1893	1893	1901
Johnson, N. M., Durham, (Hon.); Wash. Univ. Sch. of Med., 1877	1889	1879

Name and Address	Licensed	Joined State Society
Johnston, Christopher, Durham; Johns Hopkins, 1926	1930	1930
Jones, Robt. Randolph, Jr., Durham; Johns Hopkins, 1928	.....	1933
Jones, Thomas T., Durham; Johns Hopkins, 1932	1934	1935
Kerns, T. C., Durham; Univ. of Pa., 1911; U.N.C.	1911	1912
Lloyd, B. B., Carrboro; Univ. of N. C., 1909	1909	1914
London, A. H., Durham; Univ. of Pa., 1927; U.N.C.	1927	1930
MacNider, Wm. deB., Chapel Hill; Univ. of N. C., 1903	1903	1903
McBryde, Angus M., Durham; Univ. of Pa., 1928	1931	1932
McCutcheon, W. B., Durham; Med. Coll. of Va., 1921	1921	1924
McKee, Lewis Middleton, Durham; U.N.C. & Temple Univ., 1933	1934	1934
McPherson, S. D., Durham, (Hon.); Univ. of Md., 1903	1903	1904
Manning, I. H., Chapel Hill, (Hon.); Long Island Coll. Hosp., N. Y., 1897; U.N.C.	1899	1901
Markham, Blackwell, Durham; Harvard Med. Coll., 1922; U.N.C.	1922	1925
Mangum, C. S., Chapel Hill; Jeff. Med. Coll., 1894	1896	1898
Nichols, R. E., Jr., Durham; Univ. of Pa., 1930	1930	1932
Nichols, Rhodes E., Durham, (Hon.), Rt. 8; Va. Med. Coll., Richmond, 1890; U.N.C.	1890	1904
Perry, D. R., Durham; Jeff. Med. Coll., 1919	1919	1922
Persons, Elbert Lapsley, Durham; Harvard Med. Sch., 1927	1931	1931
Powell, Albert H., Durham; Univ. of Ga., 1924	1925	1925
Raney, R. B., Durham	.....	1935
Reeves, Robert J., Durham; Baylor Univ., 1924	1930	1930
Riggsbee, A. E., Durham; Univ. of N. C., 1909	1909	1911
Roberson, Foy, Durham; Jeff. Med. Coll., 1909; U.N.C.	1909	1912
Roberts, Bryan N., Hillsboro; Univ. of Md., 1925; U.N.C.	1925	1926
Roberts, B. W., Durham; Univ. of Md., 1924; U.N.C.	1924	1927
Robertson, E. M., Durham; Tulane Univ., 1912; U.N.C.	1912	1913
Rose, A. S., Chapel Hill; Univ. of N. C., B.S. 1930; Harvard Med., 1932	1932	1935
Ross, George H., Durham, (Hon.); Univ. Tenn., 1899	1899	1904
Ross, Robert A., Durham; Univ. of Pa., 1922; U.N.C.	1922	1925
Ruffin. J. M., Durham; Univ. Va., 1926	1930	1931
Schular, J. E., East Durham; Med. Coll. of Va., 1914	1920	1922
Shands, Alfred Rives, Jr., Durham; Univ. of Va., 1922	1929	1930
Smith, D. T., Durham; Johns Hopkins, 1922	.....	1931
Speed, J. A., Durham, Jeff. Med. Coll., 1914	1914	1916
Spikes, N. O., Durham; Jeff. Med. Coll., 1924; U.N.C.	1924	1927
Sprunt, Douglas H., Durham; Yale Med. School, 1927	1934	1935
Stanford, Lois Foote, Durham; Univ. of Pa., 1921	1923	1924
Stanford, W. R., Durham; Univ. of Pa., 1919	1919	1923
Strowd, W. A., Durham; Univ. of N. C., 1909	1909	1926
Sweaney, H. M., Durham; Univ. of Pa., 1919	1919	1920
Tyler, E. R., Durham; Jeff. Med. Coll., 1923	1923	1927
Watkins, G. T., Durham; Jeff. Med. Coll., 1915	1915	1917
Watkins, W. M., Durham; Jeff. Med. Coll., 1923	1923	1925

EDGECOMBE-NASH COUNTIES SOCIETY

President: John L. Lane, Rocky Mount; N. C. Med. Coll., 1906	1906	1914
Secretary: Roy Norton, Rocky Mount; Vanderbilt, 1928; U.N.C.	1928	1932
Anderson, R. S., Rocky Mount; Univ. of Md., 1924; U.N.C.	1924	1932
Bailey, C. W., Rocky Mount	.....	1930
Baker, Julian Meredith, Tarboro, (Hon.); Univ. of Md., 1879	1879	1879

Name and Address	Licensed	Joined State Society
Bass, Spencer P., Tarboro; Univ. of Va., 1906	1907	1909
Battle, N. P., Rocky Mount; Univ. of Pa., 1926; U.N.C.	1930	1931
Battle, Ivan Proctor, Rocky Mount; Jeff. Med. Coll., 1904	1905	1914
Boice, E. S., Rocky Mount; Univ. of Pa., 1909	1914	1915
Brantley, Hassell, Spring Hope; Jeff. Med. Coll., 1888	1888	1901
Brantley, J. C., Spring Hope; Jeff. Med. Coll., 1916	1916	1922
Broadway, R. E., Tarboro; Med. Coll. of S. C., 1911	1923	1926
Coppedge, T. O., Nashville; Coll. of Phys. and Surg., Balt., 1908; U.N.C.	1909	1917
Cutchin, J. Henry, Whitakers; Univ. Coll. of Med., Rich., 1911; U.N.C.	1911	1915
Daughtridge, A. L., Rocky Mount; Univ. of Md., 1924; U.N.C.	1924	1924
Deans, A. W., Battleboro; Med. Coll. of Va., 1915	1915	1917
DeLoatch, M. W., Tarboro; Med. Coll., Va., 1928	1928	1930
Dixon, W. H., Rocky Mount; Jefferson Med. Coll., 1919; U.N.C.	1919	1922
Fleming, M. I., Rocky Mount; Jeff. Med. Coll., 1904; U.N.C.	1906	1919
Green, Wm. W., Tarboro; Univ. N. C., 1908	1908	1910
Hooks, Bordon, Tarboro; U.N.C.; Richmond Med. Sch., 1930	1930	1932
House, W. O., Tarboro; Grad., 1927	1927	1930
Jones, W. S., Nashville; 1927	1927	1927
Justa, Samuel H., Macclesfield; Med. Coll. of Va., 1933	1934	1934
Kinlaw, Wm. Bernard, Rocky Mount; Univ. of Pa., 1920	1920	1923
Knowles, D. L., Rocky Mount; Univ. of Pa., 1918; U.N.C.	1918	1920
Kornegay, Lemuel W., Rocky Mount, (Hon.); N. C. Med. Coll., 1906	1906	1906
Large, H. Lee, Rocky Mount; Med. Coll. Va., 1917	1918	1918
Looney, J. J. W., Rocky Mount; Univ. of Va., 1917	1917	1919
Martin, J. H., Red Oaks; Univ. of Nashville, 1903	1904	1916
Noell, R. H., Rocky Mount; Univ. of Md., 1916	1916	1920
Norfleet, A. C., Tarboro; Univ. of Pa., 1924; U.N.C.	1925	1927
Pearson, H. O., Pinetops; Med. Coll. of Va., 1926	1927	1928
Perry, E. M., Rocky Mount; P. & S., Balt., 1907	1907	1920
Raby, J. G., Tarboro; Univ. Coll. of Med., 1911	1911	1912
Ray, J. C., Whitakers; Med. Coll. Va., 1909	1909	1935
Smith, C. T., Rocky Mount; Univ. of Pa., 1918; U.N.C.	1918	1920
Speight, J. A., Rocky Mount; Univ. of La., 1914; U.N.C.	1915	1916
Staley, S. Walter, Rocky Mount; Med. Coll. of S. C., 1901; U.N.C.	1901	1914
Stone, M. L., Rocky Mount; Univ. of Pa., 1924; U.N.C.	1928	1929
Sykes, J. V., Rocky Mount; Univ. Pa., 1929; U.N.C.	1929	1930
Thorp, A. T., Rocky Mount; Univ. of Pa., 1921; U.N.C.	1921	1923
Vann, J. R., Spring Hope; Jeff. Med. Coll., 1917	1917	1919
Walker, Robert J., Jr., Tarboro; Med. Coll. Va., 1932	1934	1935
Wheless, W. P., Spring Hope; U.N.C.	.....	1934
Willis, B. C., Rocky Mount; Med. Coll. of Va., 1909	1916	1916
Winstead, J. A., Rocky Mount; N. C. Med. Coll., 1914	1916	1916
Wooten, Amos Monroe, Pinetops; Univ. of N. C., 1910	1910	1911

FORSYTH COUNTY SOCIETY

President: Jas. B. Whittington, Winston-Salem; N. C. Med. Coll., 1911	1911	1913
Secretary: Paul A. Yoder, Winston-Salem; Univ. Pa., 1923; U.N.C.	1923	1925
Ader, O. L., Walkertown; Univ. of Pa., 1925	1925	1927
Avery, E. S., Winston-Salem; Univ. of Pa., 1928; U.N.C.	1928	1930
Beavers, J. W., Kernersville; Univ. of Pa., 1930	1930	1935

Name and Address	Licensed	Joined State Society
Belton, J. F., Winston-Salem; Univ. of Pa., 1914	1914	1916
Benbow, Edgar V., Winston-Salem; Jeff. Med. Coll., 1925	1925	1927
Benbow, J. T., Winston-Salem; N. C. Med. Coll., 1910; U.N.C.	1910	1920
Bowers, M. A., Winston-Salem; Tulane Univ., 1911; U.N.C.	1911	1914
Brown, F. B., Winston-Salem; Univ. of Ga., 1926	1926	1930
Butler, Leroy J., Winston-Salem; Med. Coll. of Va., 1915	1920	1921
Carlton, Romolus L., Winston-Salem; Univ. of Md., 1906	1906	1906
Casstevens, J. C., Clemmons; Va. Med. Coll., 1926	1926	1927
Combs, Fieldings, Winston-Salem; Med. Coll. of Va., 1923	1931	1932
Cook, J. L., Winston-Salem; Univ. of Pa., 1925; U.N.C.	1925	1927
Cooke, G. C., Winston-Salem; Univ. of Md., 1919; U.N.C.	1919	1920
Couch, V. F., Winston-Salem; P. and S., New York, 1911	1911	1919
Craig, S. D., Winston-Salem; Tulane Univ., 1908	1911	1912
Dalton, Wm. N., Winston-Salem, (Hon.); N. C. Med. Coll., 1904	1904	1905
Davis, Thos. W., Winston-Salem, (Hon.); S. C. Med. Coll., 1898; U.N.C.	1899	1899
DeLaney, C. O., Winston-Salem; Jefferson, 1919; U.N.C.	1919	1922
Dodge, Eva F., Winston-Salem; Med. Coll. Univ. of Md., 1925	1932	1932
Drummond, C. S., Winston-Salem; 1930	1933	1933
Fearington, J. C. P., Winston-Salem; Rush Med. Coll., 1930; U.N.C.	1933	1934
Garvey, Fred K., Winston-Salem; Univ. of Cincinnati; 1925; U.N.C.	1925	1933
Garvey, R. R., Winston-Salem; N. C. Med. Coll., 1915	1915	1919
Goswick, H. W., Jr., Winston-Salem; Univ. of Tenn., 1931	1934	1935
Gray, Eugene Price, Winston-Salem; Johns Hopkins, 1906	1907	1908
Grimes, W. L., Winston-Salem; Johns Hopkins, 1910	1910	1915
Hart, O. J., Winston-Salem; Med. Coll. of S. C., 1925	1930	1932
Hege, J. Roy, Winston-Salem; Univ. of Md., 1916; U.N.C.	1916	1917
Holleman, Charles, Winston-Salem; Jeff., 1932	1932	1933
Holmes, George W., Winston-Salem; Med. Coll. Va., 1931	1931	1933
Hurdle, S. W., Winston-Salem; Jeff. Med. Coll., 1914	1914	1915
Johnson, Paul W., Winston-Salem, 1930	1932	1933
Johnson, Wingate M., Winston-Salem; Jeff. Med. Coll., 1908	1908	1911
Jones, Beverly N., Winston-Salem; Med. Coll. of Va., 1915	1915	1921
Jones, R. Rives, Winston-Salem; Med. Coll. of Va., 1923	1923	1925
Keiger, O. R., Winston-Salem; Univ. Coll. of Med., Richmond, 1911; U.N.C.	1911	1915
Kerr, Jas. Edwin, Winston-Salem, (Hon.); Univ. of Md., 1897	1898	1898
Kirby, W. L., Winston-Salem; Vanderbilt, 1925	1926	1930
Lassiter, V. C., Winston-Salem; Emory Univ., 1925	1928	1929
Linville, Aaron Y., Winston-Salem, (Hon.); Univ. of N. Y., 1889	1889	1896
Long, Vann McKee, Winston-Salem; N. C. Med. Coll., 1906	1906	1908
McCants, C. H., Winston-Salem; Med. Coll. of S. C., 1925	1929	1931
Marshall, J. F., Winston-Salem; Univ. of Pa., 1931	1931	1935
Moore, R. A., Winston-Salem; N. C. Med. Coll., 1911	1911	1917
Munt, H. F., Winston-Salem; Med. Coll. Va., 1911	1914	1915
Paddison, Jno. Robt., Kernersville, (Hon.); Univ. of Md., 1902; U.N.C.	1902	1904
Pepper, John Kerr, Winston-Salem; P. and S., Balt., 1907	1908	1908
Perkins, J. R., Winston-Salem; Va. Med. Coll., 1904	1910	1917
Pfohl, Samuel F., Winston-Salem, (Hon.); Univ. of Pa., 1894	1898	1898
Pool, B. B., Winston-Salem; Jeff. Med. Coll., 1923	1923	1925
Poole, C. Glenn, Winston-Salem; Tulane, 1924	1924	1927
Pulliam, B. E., Winston-Salem; Jeff. Med. Coll., 1928	1928	1931

Name and Address	Licensed	Joined State Society
Rankin, S. W., Winston-Salem; Jeff. Med. Coll., 1912	1912	1914
Redfern, T. C., Winston-Salem; L. I. Med. Coll. Hosp., 1916	1921	1921
Rousseau, J. P., Winston-Salem; Univ. of Md., 1918; U.N.C	1920	1920
Schallert, P. O., Winston-Salem; Univ. of Ill. Med. Dept., 1904	1911	1912
Simmons, R. R., Winston-Salem; Va. Med. Coll., 1917	1923	1924
Sink, V. Rex, Winston-Salem; Univ. of Pa., 1928	1930	1935
Slate, John S., Winston-Salem, (Hon.); Univ. Coll. Med., Richmond, Va., 1900	1899	1904
Spainhour, Ellis H., Winston-Salem, (Hon.); Balt. Med. Coll., 1898	1898	1898
Speas, D. C., Rt. 2, Winston-Salem; Univ. of Md., 1911	1913	1924
Speas, W. P., Winston-Salem; Med. Coll. of Va., 1912	1911	1912
Spencer, Wm. O., Winston-Salem, (Hon.); Jeff. Med. Coll., 1891	1891	1894
Spicer, Richard W., Winston-Salem; N. C. Med. Coll., 1910; Univ. of Pa., 1911	1910	1916
Sprunt, W. H., Jr., Winston-Salem; Univ. of Pa., 1918	1918	1925
Street, C. A., Winston-Salem; Harvard, 1918	1918	1925
Strickland, Edward F., Winston-Salem, (Hon.); Univ. of New York, 1887; U.N.C	1887	1893
Thompson, Edg. S., Winston-Salem; Univ. of N. Y., 1919	1919	1921
Tuttle, Reuben G., Winston-Salem; N. C. Med. Coll., 1909	1909	1913
Valk, A. deT., Winston-Salem; Johns Hopkins, 1910	1913	1914
Wall, R. L., Winston-Salem; Jeff. Med. Coll., 1912	1912	1914
Wright, O. E., Winston-Salem; Emory Univ., 1924	1924	1928
Wyatt, Wortham, Winston-Salem; Univ. of Pa., 1913; U.N.C	1913	1916
Wylie, W. deK., Winston-Salem; Univ. of Va., 1924	1926	1928

FRANKLIN COUNTY SOCIETY

President:	.....	.....
Secretary: James E. Fulghum, Louisburg; Med. Coll. of Va., 1931	1931	1934
Burt, S. P., Louisburg, (Hon.); P. and S., Balt., 1896	1896	1904
Cheves, W. G., Bunn; Jeff. Med. Coll., 1925	1925	1933
Johnson, Harry H., Louisburg; Coll. of P. and S., Baltimore, 1915	1919	1919
Perry, A. H., Wood; Univ. of Md. and P. and S., Balt., 1924	1924	1925
Perry, H. G., Louisburg; P. and S., Balt., 1915	1915	1916
Timberlake, C. V., Youngsville; Jefferson Med. Coll., 1915	1915	1922
Yarborough, R. F., Louisburg, (Hon.); Geo. Wash. Univ., 1898	1899	1899

GASTON COUNTY SOCIETY

President:	.....	.....
Secretary: H. F. Glenn, Jr., Gastonia; Emory Univ., 1932	1932	1934
Allen, M. H., Cramerton; Emory Univ., 1929	1930	1931
Anders, McT. G., Gastonia, (Hon.); Md. Coll., 1901	1902	1902
Anthony, J. E., Kings Mountain; Univ. of Tenn., 1911	1911	1911
Anthony, W. A., Gastonia; Med. Coll. of Va., 1929	1929	1932
Blair, J. L., Gastonia; Atlanta Med. Coll., 1915	1920	1921
Campbell, J. W., Gastonia; P. and S., Balt., 1893	1919	1920
Cranford, J. F., Gastonia; Univ. of N. C., 1909	1934	1935
Eddleman, Hall M., Gastonia, (Hon.); College Phys. and Surg., Balt., 1886	1889	1904
Garrison, D. A., Gastonia, (Hon.); Louisville Med. Coll., 1896	1896	1900
Groves, R. B., Lowell; Med. Coll. of Va., 1924	1924	1924
Glenn, Lucius N., Gastonia, (Hon.); Univ. of Md., 1897	1897	1904
Houser, Forest M., Cherryville; Univ. of Pa., 1928; U.N.C	1929	1930

Name and Address	Licensed	Joined State Society
Jones, W. M., Gastonia; Med. Coll. S. C., 1922	1927	1928
Lyday, C. E., Gastonia; Atlanta Sch. Med., 1910	1910	1920
McAdams, C. R., Belmont; N. C. Med. Coll., 1912	1912	1916
McChesney, W. W., Gastonia; Med. Coll. Va., 1915	1926	1927
McConnell, H. R., Gastonia	.....	1930
McDowell, R. H., Belmont; Univ. of Md., 1929; U.N.C.	1930	1931
Miller, R. C., Gastonia; N. C. Med. Coll., 1909; U.N.C.	1918	1919
Parks, W. B., Gastonia; Univ. of Md., 1924	1924	1927
Pressly, J. M., Belmont; N. C. Med. Coll., 1915	1915	1920
Pugh, Charles H., Gastonia; N. C. Med. Coll., 1910	1910	1913
Quickel, Thos. C., Gastonia, (Hon.); Tulane Univ., 1900; U.N.C.	1899	1904
Ramseur, J. T., Gastonia; Univ. of Chicago, 1933	1934	1935
Reid, James W., Lowell; Jefferson, 1908	1908	1909
Rhyne, Robt. E., Gastonia; N. C. Med. Coll., 1907	1907	1908
Roberts, W. M., Gastonia; Tufts, 1925	1928	1929
Swann, Jos. F., Gastonia, (Hon.); P. & S., Balt., 1896	1896	1904
Wilkins, S. A., Dallas, (Hon.); Univ. of Ky., 1902	1903	1903

GATES COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Blanchard, T. W., Hobbsville; Med. Coll. of Va., 1911	1911	1919
Carter, Thomas L., Gatesville; Med. Coll. of Va., 1917	1917	1928

GRANVILLE COUNTY SOCIETY

President: S. M. Carrington, Oxford; Rush Med. Coll., 1931; U.N.C.	1931	1934
Secretary: R. W. Taylor, Oxford; Tulane Univ., 1926	1926	1928
Bradsher, J. S., Stovall; Univ. of Va., 1925	1925	1927
Daniel, N. C., Oxford; N. C. Med. Coll., 1895	1895	1902
Elliott, J. C., Oxford; Univ. of Md., 1926	1926	1928
Hays, B. K., Oxford, (Hon.); Univ. Coll. of Med., Va., 1894	1894	1897
Morris, Joseph A., Oxford, (Hon.); Vanderbilt Univ., 1890	1893	1899
Noblin, Roy L., Oxford; Med. Coll. Va., 1924	1924	1924
Taylor, Wm. L., Oxford, (Hon.); Univ. of Va., 1900	1901	1901
Thomas, Wm. N., Oxford; Va. Med. Coll., 1911	1911	1914
Thompson, Joseph W., Creedmoor; Ky. Univ. Louisville, 1904	1907	1912

GREENE COUNTY SOCIETY

President: J. H. Harper, Snow Hill; Jefferson, 1905	1906	1907
Secretary: F. W. Carroll, Hookerton; Med. Coll. of Va., 1925	1926	1927
Dawson, W. E., Hookerton; Jefferson, 1920	1920	1922
Murphy, W. B., Snow Hill; Univ. Coll. of Med., Va., 1903	1903	1905
Whittington, Wm. W., Snow Hill, (Hon.); Louisville Med. Coll., 1895	1895	1902

GUILFORD COUNTY SOCIETY

President: Wm. P. Knight, Greensboro, (Hon.); Balt. Med. Coll., 1898	1898	1898
Secretary: C. W. Jennings, Greensboro; Med. Coll. of Va., 1916	1916	1926
Ashworth, W. C., Greensboro, (Hon.); P. and S., Balt., 1892	1892	1894
Aydlett, H. T., Greensboro; Univ. of Va., 1894	1895	1907
Banner, A. C., Greensboro; Jeff. Med. Coll., 1920; U.N.C.	1920	1922
Banner, Chas. W., Greensboro, (Hon.); Univ. of Md., 1899	1899	1901

Name and Address	Licensed	Joined State Society
Battle, John T. J., Greensboro, (Hon.); P. and S., Balt., 1884	1884	1890
Berry, John, Greensboro; Jeff. Med. Coll., 1908; U.N.C.	1908	1920
Bonner, M. D., Jamestown; Univ. of Md., 1930	1930	1934
Bonner, O. B., High Point; Univ. of Md., 1917; U.N.C.	1920	1921
Bowman, H. P., Greensboro; Univ. of Tenn., 1894	1894	1905
Brockman, Harry L., High Point; Univ. of Pa., 1917; U.N.C.	1917	1921
Buie, R. M., Greensboro; Jeff. Med. Coll., 1914	1914	1920
Burrus, John T., High Point, (Hon.); Univ. of Md., 1900; Grant Univ., 1902; Davidson College, 1898	1898	1898
Cater, R. L., Greensboro; Emory Univ., 1916	1932	1932
Clary, Wm. T., Greensboro; Univ. of Penna., 1928; U.N.C.	1928	1934
Cole, Walter F., Greensboro; Johns Hopkins, 1909	1909	1910
Collings, Ruth M., Greensboro; Univ. of Pa., 1923	1926	1927
Cook, H. L., Greensboro; Jeff. Med. Coll., 1918; U.N.C.	1918	1920
Cozart, S. R., Greensboro; Med. Coll. of Va., 1923	1923	1925
Davis, R. B., Greensboro; Med. Coll. of Va., Richmond, 1915	1916	1917
Davis, P. B., High Point; Jefferson, 1926; U.N.C.	1926	1929
Dees, Ralph Erastus, Greensboro; Univ. of Md., 1906	1908	1909
Dees, Rigdon O., Greensboro; Univ. of Md., 1906	1907	1908
Dick, Julius Vance, Gibsonville; Univ. of N. C., 1907	1907	1908
Durham, C. W., Greensboro; Geo. Wash. Univ., 1927	1927	1929
Edwards, V. E., Greensboro; Univ. of Md., 1913	1913	1913
Flagge, Philip W., High Point; Wash. Univ., St. Louis, 1902	1905	1919
Fortune, Alex. F., Greensboro, (Hon.); Univ. Coll. of Med., Va., 1900; U.N.C.	1900	1904
Geddie, K. B., High Point; Jeff. Med. Coll., 1921; U.N.C.	1921	1923
Gilmore, C. M., Greensboro; Med. Coll. of Va., 1925	1925	1926
Glascock, Joy H., Greensboro, (Hon.); Women's Med. Coll. of Balt., 1896	1896	1900
Gove, Anna M., Greensboro, (Hon.); Women's Med. Coll. of New York, Infirmary, 1892	1894	1896
Grayson, C. S., High Point; Geo. Wash. Univ., 1906	1907	1908
Groome, J. G., High Point; Univ. of Ohio, 1924	1924	1925
Harden, R. N., Greensboro; Univ. of Pa., 1922; U.N.C.	1922	1924
Harrison, Edmund, Greensboro, (Hon.); Univ. Coll. of Med., 1896	1900	1900
Harrison, Edward T., High Point; Johns Hopkins Medical School, 1926	1926	1928
Hiatt, H. B., Wilmington; Univ. of Md., 1907	1907	1910
Holt, D. W., Greensboro; Jeff. Med. Coll., 1918	1918	1920
Hudson, C. C., Greensboro; Univ. Coll. of Med. of Va., 1910	1918	1924
Jackson, Walter Leo., High Point; N. C. Med. Coll., 1911	1911	1913
Jarboe, Parron, Greensboro; Georgetown Univ., 1905	1906	1907
Jones, Wm. M., Greensboro, (Hon.); Univ. of Md., 1903	1903	1903
Keiger, James A., Greensboro; Univ. of Va., 1916	1916	1919
Keith, Marion Y., Greensboro; Univ. of Md., 1923	1923	1927
Lackey, M. A., High Point; N. C. Med. Coll., 1917	1923	1924
Long, E. F., High Point; Med. Coll. of Va., 1909	1909	1912
Lyday, R. O., Greensboro; Univ. of Pa., 1920; U.N.C.	1920	1927
McAnnally, Wm. J., High Point, (Hon.); Balt. Med. Coll., 1897	1896	1899
McCain, Wm. R., High Point, (Hon.); Univ. of Md., 1897; U.N.C.	1898	1898
McGee, J. M., Greensboro; Univ. of Pa., 1925; U.N.C.	1927	1927
Maness, A. K., Greensboro; Jeff. Med. Coll., 1928; U.N.C.	1928	1929
Mann, I. Thurman, High Point; Jeff. Med. Coll., 1912	1912	1915
Meadows, W. J., Greensboro, (Hon.); Med. Coll. of Ala., 1894	1899	1904

Name and Address	Licensed	Joined State Society
Moseley, Charles W., Greensboro, (Hon.); Balt. Med. Coll., 1893	1893	1896
Miles, May S., Greensboro; Laura Mem. Women's Coll. of Med., Cincinnati, Ohio, 1898	1904	1905
Neal, J. Walter, Greensboro	.....	1935
Ogburn, H. H., Greensboro; Johns Hopkins Univ., 1913; U.N.C.	1913	1914
Ownbey, Arthur D., Greensboro; Med. Coll. Va., 1920	1925	1927
Pate, F. J., Greensboro; Univ. of Md., and P. and S., Balt., 1908	1908	1915
Parker, H. R., Greensboro; Univ. of Syracuse, 1923	1924	1925
Patterson, Fred M., Greensboro; Univ. of Pa., 1924; U.N.C.	1924	1928
Perry, G. G., High Point; Med. Coll. of Va., 1933	1933	1934
Prefontaine, E., Greensboro; Laval Univ., Quebec, 1927	1931	1934
Ravenel, S. F., Greensboro; Johns Hopkins, 1923	1923	1926
Reaves, W. P., Greensboro; Univ. of the South, 1903	1905	1907
Reitzel, Claude E., High Point, (Hon.); P. and S., Atlanta, 1902	1902	1902
Rhudy, Booker, E., Greensboro; Med. Coll. Va., 1916	1926	1927
Saunders, S. Stewart, High Point; Harvard Med. School, 1924	1926	1927
Schoonover, R. A., Greensboro; Baltimore Med. Coll., 1905	1912	1912
Sharpe, F. A., Greensboro; Univ. of Pa., 1916	1916	1920
Shelburne, P. A., Greensboro; Univ. of Va., 1927	1928	1928
Sikes, Henry, Greensboro; Jeff. Med. Coll., 1931	1933	1934
Simmons, L. L., Greensboro; Univ. of Tenn., 1893; Vanderbilt Univ., 1899	1918	1919
Slate, M. L., High Point; Univ. of Md., 1931	1931	1934
Slate, J. W., High Point; Univ. Coll. of Med., Rich., Va., 1900	1899	1925
Smith, Alick T., Greensboro; Med. Coll. of Va., 1908	.....	1913
Starr, H. F., Greensboro; Jeff. Med. Coll., 1916; U.N.C.	1916	1917
Stanton, D. A., High Point, (Hon.); Vanderbilt Univ., 1887	1887	1891
Stellings, Richard M., Greensboro	.....	1934
Sumner, E. A., High Point; Baylor Univ., Tex., 1925	1926	1927
Tankersley, J. W., Greensboro; Jeff. Med. Coll., 1906; U.N.C.	1906	1907
Taylor, F. R., High Point; Univ. of Pa., 1913	1913	1915
Taylor, James N., Greensboro; Med. Coll. of Va., 1901	1902	1905
Taylor, Jas. T., Greensboro; Univ. of Mo.; Coll. of P. and S., Balt., 1908	1908	1910
Taylor, S. R., Greensboro; Univ. of Pa., 1921; U.N.C.	1921	1924
Thomas, J. G., Greensboro; Med. Coll. Va., 1915	1915	1920
Thompson, C. D., High Point, (Hon.); Univ. of Tenn., 1901	1901	1904
Turner, J. P., Greensboro, (Hon.); Univ. of Md., 1896	1897	1904
Whittington, Claude, Greensboro; Univ. of Md., 1927	1927	1929
Williams, John D., Guilford Station, (Hon.); Vanderbilt Univ., 1898	1898	1898
Williams, J. D., Jr., Stokesdale; W. Md., 1930; Temple, 1930	1931	1935
Wilson, Albert R., Greensboro, (Hon.); Jeff. Med. Coll., 1882; U.N.C.	1882	1882
Wolfe, H. C., Greensboro; Med. Coll. of Va., 1917	1917	1920
Wood, George T., High Point; Jeff. Med. Coll., 1928	1928	1935
Woodruff, Fred G., High Point; Med. Coll. of Va., 1917	1917	1919
Wolff, D. R., Greensboro; Jeff. Med. Coll., 1918	1918	1920
York, Alexander A., High Point; Chattanooga Med. Coll., 1907	1907	1909

HALIFAX COUNTY SOCIETY

President: W. G. Suiter, Weldon; Med. Coll. of Va., 1917	1917	1920
Secretary: R. S. McGeachy, Weldon, (Hon.); Bellevue Hosp., 1894	1894	1895
Beckwith, R. P., Roanoke Rapids; Univ. of Pa., 1911	1913	1916
Covington, J. M. C., Roanoke Rapids	.....	1933

Name and Address	Licensed	Joined State Society
Jarman, F. G., Roanoke Rapids; Univ. Coll. of Med., Va., 1911	1914	1916
Joyner, P. W., Enfield; Syracuse Univ., 1932	1932	1935
Justice, L. H., Littleton; Med. Coll. of Va., 1916	1920	1920
Lassiter, H. G., Weldon; Jeff. Med. Coll., 1918; U.N.C.	1918	1920
Long, T. W. M., Roanoke Rapids; Univ. Coll. of Med., Va., 1908; U.N.C.	1909	1910
Martin, J. W., Roanoke Rapids; Med. Coll. of Va., 1916	1919	1920
Neville, C. H., Scotland Neck; Tulane Univ., 1927	1927	1927
Nicholson, B. M., Enfield; Va. Univ. Coll. of Med., 1910	1910	1913
Palmer, Horace, Littleton; Atl. Sch. of Med., 1912	1912	1920
Royster, Thomas H., Roanoke Rapids; Univ. Coll. of Med., Richmond, 1908; U.N.C.	1908	1914
Smith, O. F., Scotland Neck; Univ. Coll. of Va., 1889; U.N.C.	1899	1904
Thigpen, H. G., Scotland Neck; Jeff. Med. Coll., 1917; U.N.C.	1917	1920
Weathers, Bahnson, Roanoke Rapids; Wash. Univ. Med. School, St. Louis, 1917	1921	1922
White, Francis W. M., Halifax; Richmond Med. Coll., 1924	1924	1924

HARNETT COUNTY SOCIETY

President: Joseph F. McKay, Buies Creek, (Hon.); S. C. Med. Coll., 1884	1885	1900
Secretary: A. T. Wyatt, Lillington; Jeff. Med. Coll., 1919	1919	1927
Corbett, C. L., Dunn; Emory Univ., 1927	1927	1928
Fleming, Fred, Coats	.....	1933
Halford, Jos. W., Lillington, (Hon.); Geo. Wash. Univ., 1904	1905	1905
Hicks, Isham Faison, Dunn, (Hon.); N. C. Med. Coll., 1902	1902	1904
Highsmith, Charles, Dunn, (Hon.); Balt. Med. Coll., 1898	1898	1898
Holt, Wm. P., Erwin, (Hon.); Jeff. Med. Coll., 1895	1895	1901
Holt, Wm. P., Jr., Erwin; Jeff. Med. Coll., 1926; U.N.C.	1926	1927
McLean, John W., Godwin; N. C. Med. Coll., 1902	1902	1906
Martin, J. F., Dunn; N. C. Med. Coll., 1905	1905	1918
Melvin, Wayman C., Linden; Univ. Coll. of Med., Richmond, 1900	1900	1905
Odell, J. W., Dunn; Med. Dept. Univ. of Ga., 1926	1928	1929
Peede, A. W., Lillington	.....	1933
Wilson, S. Glenn, Angier; Med. Coll. Va., 1930	1930	1932

HAYWOOD COUNTY SOCIETY

President: Thomas Stringfield, Waynesville, (Hon.); Vanderbilt Univ., 1898; U.N.C.	1898	1899
Secretary: V. H. Duckett, Canton; Univ. of Pa., 1930	1930	1932
Abel, J. F., Waynesville, (Hon.); Univ. of Balt., 1892	1893	1899
Francis, Wm. G., Waynesville; Jeff. Med. Coll., 1915; U.N.C.	1916	1925
Johnson, W. C., Canton; Tulane Univ. of La., 1912; U.N.C.	1912	1917
Kirkpatrick, W. L., Waynesville; Univ. Vanderbilt, 1894	1894	1895
Lancaster, N. F., Waynesville; Med. Coll. of Va., 1931	1932	1933
McCracken, J. R., Waynesville, (Hon.); N. C. Med. Coll., 1902	1902	1903
McCracken, M. H., Canton; Univ. Louisville, 1930	1930	1933
Moore, Roy H., Canton; Washington Univ., 1931; U.N.C.	1931	1934
Owen, Robert H., Canton; Univ. of Pa., 1931	1931	1935
Pate, J. F., Canton; Med. Coll. of S. C., 1927	1927	1929
Reeves, J. L., Canton; Vanderbilt, 1913	1913	1917
Robinson, Robt. S., Hazelwood; Med. Coll. of Va., 1930	1930	1932
Russell, Jesse M., Canton; Univ. of Nashville, 1911	1911	1912

Name and Address	Licensed	Joined St te Society
Sisk, C. N., Waynesville; Univ. of Nash., 1905	1922	1923
Sloan, William S., Waynesville; Vanderbilt Univ., 1933	1933	1935
Stretcher, R. H., Waynesville; Rush Med. Coll., Chicago, 1927	1927	1930
Stringfield, Samuel L., Waynesville; Jeff. Med. Coll., 1905; U.N.C.	1905	1907
Westmoreland, J. R., Canton; Washington Univ., 1932; U.N.C.	1932	1934

HENDERSON COUNTY SOCIETY

President: J. W. Payne, Hendersonville; Md. Med. Coll., 1903	1924	1926
Secretary: Robt. Hyatt Brown, Hendersonville; Jeff. Med. Coll., 1930; U.N.C.	1933	1934
Allen, W. O., Hendersonville; Med. Coll. of S. C., 1925	1926	1926
Bliss, F. E., Fletcher; Coll. of Med. Evangelists, 1933	1933	1934
Brown, J. S., Hendersonville, (Hon.); Northwestern Univ., 1893	1894	1895
Brown, J. S., Jr., Hendersonville; Univ. of Tulane, 1925	1926	1927
Dixon, Guy E., Hendersonville, (Hon.); P. and S., St. Louis, 1903	1903	1903
Fauntleroy, Jas. W., Zirconia; P. and S., Columbia	1900	1930
Kirk, W. R., Hendersonville, (Hon.); Central Univ., 1891	1901	1903
Mallett, E. P., Hendersonville; L. I. Coll. Hosp., Brooklyn, 1889	1914	1914
Trotter, Fred O., Hendersonville; Univ. of Minnesota, 1933	1934	1934
Russell, Lloyd P., Fletcher; Univ. of Nashville, 1901	1902	1903
Salley, E. McQueen, Hendersonville; Univ. of Md., 1905	1905	1908
Sumner, Thos. W., Fletcher; Jefferson Med. Coll., 1910; U.N.C.	1910	1911
Weddington, J. L., Hendersonville; Sou. Med. Coll., Atlanta, 1898	1925	1926
Woodcock, J. H., Hendersonville; Hosp. College of Med., 1892	1894	1899

HERTFORD COUNTY SOCIETY

President: L. M. Futrell, Murfreesboro; Va. Med. Coll., 1914; U.N.C.	1914	1918
Secretary: D. W. Ruffin, Ahoskie; Med. Coll. of Va., 1932	1932	1932
Matheson, J. Gaddy, Ahoskie; Jeff., 1929; U.N.C.	1929	1931
Mitchell, Paul H., Ahoskie; Univ. Coll. of Med., Richmond, 1907	1907	1908
Pollard, W. B., Winton; Univ. of Pa., 1899	1903	1905
Ruffin, J. B., Powellsville; Univ. of the South, 1898	1906	1904
Walker, L. K., Ahoskie; Univ. of Md., 1911; U.N.C.	1911	1917

HOKE COUNTY SOCIETY

President: W. F. Thornton, Sanatorium; Baylor Univ., 1927	1927	1931
Secretary: R. L. Murray, Raeford; Univ. of Md., 1923	1923	1925
Bittinger, S. M., Sanatorium; Geo. Wash. Univ., 1918	1924	1924
Brown, G. W., Raeford; Ky. School of Med., Louisville, 1898	1900	1900
Bethune, A. C., Raeford	.....	.....
Easom, H. F., Sanatorium; Wash. Univ. Med. School; U.N.C.	1929	1929
McBrayer, L. B., Southern Pines, (Hon.); Louisville Med. Coll., 1889	1891	1900
McBrayer, R., N. Y. City, N. Y.; Univ. of Pa., 1916	1916	1917
McCain, P. P., Sanatorium; Univ. of Md. and Coll. P. and S., Balt., 1911	1914	1914
Matheson, R. A., Raeford; Jeff. Med. Coll., 1926	1926	1928
Ormand, A. L., Sanatorium; Jefferson, 1930	1930	1935
Papineau, A., Sanatorium; Univ. of Penna., 1931	1933	1934
Seay, Hillis L., Sanatorium; Vanderbilt Univ., 1930	1933	1934
Williams, J. H., Sanatorium; Jeff. Med. Coll., 1920	1920	1922

HYDE COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Harris, Arthur Graham, Fairfield; Univ. of the South, 1905	1905	1908

IREDELL-ALEXANDER COUNTIES SOCIETY

President: L. R. Shaw, Statesville; Med. Coll. of Va., 1930	1930	1931
Secretary: Chas. B. Herman, Statesville; Jeff. Med. Coll., 1923; U.N.C.	1923	1925
Alexander, Jas. M., Statesville; Georgetown Univ., 1925; U.N.C.	1926	1927
Anderson, Thos. Eli., Statesville, (Hon.); Jeff. Med. Coll., 1878	1879	1879
Asburn, C. W., Statesville; Wash. Univ., 1927	1927	1928
Bell, A. E., Mooresville, (Hon.); Univ. of Md., and Coll. of P. and S., 1897	1897	1904
Clayton, M. B., Statesville; Univ. Louisville, 1917	1933	1935
Crouch, T. D., Stony Point; N. C. Med. Coll., 1909, and Univ. of Md., 1910	1909	1915
Davis, Jas. W., Statesville; Univ. of Pa., 1913; U.N.C.	1913	1915
Easley, P. S., 2508 Pierce Ave., Nashville, Tenn.; N. C. Med. Coll., 1907 & Jeff. Med. Coll., 1908	1907	1913
Edwards, A. M., Taylorsville; Emory Univ., 1907	1907	1934
Gilmore, W. D., Tombstone, Ariz.; Univ. of N. C., 1903	1903	1904
Goode, T. V., Statesville; Univ. Coll. of Med., Va., 1912	1912	1916
Grady, F. M., Mooresville; Univ. of Syracuse	1932	1934
Holbrook, J. Samuel, Statesville	.....	1933
Jurney, Peter C., Turnersburg; Med. Coll. of Va., 1901	1901	1904
Leeper, Donald H., Hiddenite; N. C. Med. Coll., 1906	1906	1913
Little, Lonnie M., Statesville; Jeff. Med. Coll., 1925; U.N.C.	1925	1927
Long, H. F., Statesville, (Hon.); Balt. Med. Coll., 1891	1892	1893
Long, Wm. Matthews, Mocksville; Tulane Univ., 1933	1934	1934
McElwee, Ross S., Statesville; Univ. of Md., 1909	1909	1910
McLaughlin, J. E., Statesville, (Hon.); Univ. of Md., 1886	1886	1896
McLelland, W. D., Mooresville; Jeff. Med. Coll., 1913	1913	1917
Myers, D. L., Jennings; Tulane, 1925	1928	1929
Pressly, Jas. L., Statesville; Jeff. Med. Coll., 1925	1925	1928
Price, H. L., Taylorsville; N. C. Med. Coll., 1914	1914	1930
Rhyne, S. A., Statesville; N. C. Med. Coll., 1915	1915	1920
Robertson, J. M., Charles	.....	1934
Sharpe, Frank L., Statesville, (Hon.); Univ. of N. C., 1904	1904	1905
Sherrill, C. L., Statesville; N. C. Med. Coll., 1914	1914	1915
Sloan, A. B., Mooresville; Med. Coll. of Va., 1924	1924	1926
Talley, J. S., Troutman; Univ. of N. C., 1909	1910	1917
Tatum, Roy C., Statesville; Jeff. Med., 1919	1919	1920
Taylor, G. W., Mooresville; N. C. Med. Coll., 1906	1906	1917
Templeton, J. Y., Mooresville; Jeff. Med. Coll., 1912	1913	1927
Thurston, Asa, Taylorsville; Univ. of Md., 1909	1909	1914
Trivette, W. A., Houstonville; Med. Coll. of Va., 1916	1916	1925
Watts, N. C., Taylorsville; Univ. of Tenn., 1931	1934	1935

JACKSON COUNTY SOCIETY

President: Chas. Z. Candler, Sylva; P. and S., Atlanta, 1901; U.N.C.	1901	1904
Secretary: D. D. Hooper, Sylva; Univ. of Med., Va., 1905	1905	1905
Madison, W. H., Sylva	.....	1932
Nichols, A. A., Sylva; Univ. of Nashville, 1898	1904	1904

Name and Address	Licensed	Joined State Society
Nichols, Ashbury S., Sylva; Tenn. Med. Coll., 1906	1907	1913
Stoddard, James Kent, Cashiers; John Hopkins, 1916	1925	1935
Wilkes, Grover C., Sylva; N. C. Med. Coll., 1916	1916	1920

JOHNSTON COUNTY SOCIETY

President: J. Herbert Fitzgerald, Smithfield; Jeff. Med. Coll., 1920; U.N.C	1920	1922
Secretary: J. G. Upchurch, Smithfield	.....	1935
Aycock, F. M., Princeton; Med. Coll. of Va., 1921	1921	1926
Booker, Edwin N., Selma; Univ. of Va., 1925	1925	1930
Brooks, H. E., Clayton; Med. Coll. of Va., 1917	1917	1923
Davidian, Vartan A., Smithfield; Univ. Kiev, Russia	1929	1930
Duncan, S. A., Benson; Tulane Univ., 1924	1924	1926
Grady, Jas. C., Kenly, (Hon.); Balt. Univ. School of Med., 1887	1887	1890
Hinnant, Milford, Micro; Univ. Med., 1912	1912	1913
Hocutt, Battle A., Clayton; Univ. of N. C., School of Med., 1906	1906	1908
McLemore, George A., Smithfield; Univ. of N. C., 1906	1906	1908
Massey, C. C., Smithfield; Jeff. Med. Coll., 1923; U.N.C	1923	1925
Parker, G. E., Benson, (Hon.); Coll. of P. and S., Balt., 1886	1889*	1904
Person, J. B., Selma, (Hon.); Med. Coll. of Va., 1897	1897	1900
Rose, A. H., Smithfield; Jeff. Med. Coll., 1906; U.N.C	1906	1907
Stanley, John H., Four Oaks; Univ. of N. C., 1904	1904	1906
Strickland, Arthur T., Kenly; Wash. Univ., 1932	.....	1935
Surles, J. B., Four Oaks; Jeff. Med. Coll., 1909	1909	1919
Utley, H. H., Benson; Balt. Med. Coll, 1906	1906	1910
Vick, Geo. D., Selma; Jeff. Med. Coll., 1906; U.N.C	1906	1907
Wilson, W. G., Smithfield; Jeff. Med. Coll., 1921; U.N.C	1921	1924

JONES COUNTY SOCIETY

President: A. F. Hammond, Polloksville; Univ. Coll. of Med., Va., 1903	1903	1914
Secretary: B. W. Page, Trenton; Tulane Univ., 1909	1909	1919
Bell, J. C., Maysville; P. and S., Balt., 1910	1915	1922

LEE COUNTY SOCIETY

President: J. F. Foster, Sanford; N. C. Med. Coll., 1916	1916	1919
Secretary: Floyd L. Knight, Sanford; Univ. of Va., 1924	1925	1926
Blue, Waylon, Jonesboro; Med. Coll. of Va., 1925	1925	1926
Chiles, George C., Sanford; Med. Coll. of Va., 1926	1928	1928
Lutterloh, I. Hayden, Jr., Sanford; Jeff. Med. Coll., 1921; U.N.C	1921	1922
McIver, Lynn, Sanford, (Hon.); Kentucky Univ., 1901; U.N.C	1902	1902
Matthews, M. L., Sanford, (Hon.); Univ. of N. C., 1903	1903	1904
O'Briant, A. L., Sanford; Jeff. Med. Coll., 1920; U.N.C	1920	1922
Patterson, J. H., Broadway; Med. Coll. of Va., 1932	1932	1934
Sowers, Roy G., Jonesboro; Univ. of Md., 1923	1923	1924

LENOIR COUNTY SOCIETY

President: R. G. Tyndall, Kinston; Univ. of Pa., 1928	1928	1931
Secretary: Rachel D. Davis, Kinston; Women's Med. Coll. of Penna., 1932	1933	1934
Adams, L. C., LaGrange; N. C. Med. Coll., 1903	1903	1921

* Registered.

Name and Address	Licensed	Joined State Society
Boney, Elwood R., Kinston; Univ. of Pa., 1926; U.N.C.	1926	1927
Carr, M. L., LaGrange; Med. Coll. of Va., 1916	1916	1920
Hardy, Ira M., Kinston, (Hon.); Med. Coll. of Va., 1901; U.N.C.	1902	1902
Keister, W. E., Kinston; Vanderbilt	1935	1935
Lee, Mike, Kinston; Tulane Univ., 1926	1926	1927
Lee, Thos. L., Kinston; Med. Coll. Va., 1926	1926	1927
Moseley, Z. V., Kinston; Va. Coll. of Med., 1913	1913	1914
Parrott, M. C., Kinston; Tulane Univ., 1917; U.N.C.	1917	1919
Parrott, Wm. P., Kinston, (Hon.); Tulane Univ., 1899	1899	1901
Peery, Vance P., Kinston; Med. Coll. of Va., 1916	1917	1917
Register, F. M., Kinston, (Hon.); Ky. School of Med., 1893	1891	1904
Sabiston, Frank, Kinston; Univ. of Md., 1918; U.N.C.	1919	1926
Turrentine, Kilby P., Kinston; Rush Med. Coll., 1931; U.N.C.	1932	1933
West, B. C., Kinston; Univ. of Pa., 1924; U.N.C.	1924	1926
West, C. F., Kinston; Univ. of Pa., 1917; U.N.C.	1917	1920
Whitaker, Paul F., Kinston; Med. Coll. of Va., 1922; U.N.C.	1922	1924
Wooten, Floyd P., Kinston; Jeff. Med. Coll., 1920; U.N.C.	1920	1923

LINCOLN COUNTY SOCIETY

President: J. F. Gamble, Lincolnton; Univ. of Tenn., 1903	1915	1919
Secretary: L. A. Crowell, Jr., Lincolnton; Tulane Med. Dept., 1930; U.N.C.	1930	1930
Bandy, W. G., Lincolnton; Vanderbilt Univ., 1908	1912	1916
Costner, W. V., Lincolnton; Jeff. Med. Coll., 1924; U.N.C.	1925	1927
Cornwell, A. M., Lincolnton; Geo. Wash. Univ., 1927	1927	1928
Crowell, L. A., Lincolnton, (Hon.); Balt., Med. Coll., 1892	1892	1898
Edwards, F. D., Lawndale, R. 1; Atlanta Med., 1914	1916	1919
Elliott, W. F., Lincolnton; Pa. Medico-Chir. Coll., 1916; U.N.C.	1916	1917
Gamble, J. R., Lincolnton; Univ. of Tenn., 1911	1911	1912
Hoover, C. H., Crouse, (Hon.); Chattanooga Med. Coll., 1900; Balt. Med. Coll., 1903	1903	1903
Jacocks, W. P., New York City; Univ. of Pa., 1911; U.N.C.	1911	1913

MACON-CLAY COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Angel, Edgar, Franklin; Jeff. Med. Coll., 1928	.....	1932
Angel, Furman, Franklin; Jeff. Med. Coll., 1918; U.N.C.	1923	1924
Rogers, W. A., Franklin, (Hon.); Univ. of Nashville, 1898	1898	1898

MADISON COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Kimberly, David, Jr., Hot Springs; Univ. of Cinn., 1924; U.N.C.	1926	1927
McElroy, J. L., Marshall; Washington Univ., 1930; U.N.C.	1930	1932
Moore, Jos. N., Marshall; Univ. of N. C., 1905	1905	1909
Sams, W. A., Marshall; Lincoln Memo., 1911	1919	1920

MARTIN-WASHINGTON-TYRRELL COUNTIES SOCIETY

President: Jos. H. Saunders, Williamston; Univ. Coll. of Med., Va., 1905; U.N.C.	1905	1909
Secretary: Jas. S. Rhodes, Williamston; Med. Coll. of Va., 1906	1906	1907
Bray, T. L., Plymouth; Univ. of Md., 1916	1916	1919

Name and Address	Licensed	Joined State Society
Eason, J. A., Williamston; Med. Coll. Va., 1932	1933	1934
Gibson, W. T., Roper	.....	1935
Harrell, W. H., Creswell; Jeff., 1925	1925	1926
McGowan, Claudius, Plymouth; Med. Coll. of Va., 1917	1917	1922
Nelson, Robert J., Robersonville, (Hon.); Louisville Med. Coll., 1890	1890	1893
Pittman, E. E., Oak City; Med. Coll. of Va., 1919	1919	1920
Smithwick, James E., Jamesville, (Hon.); Univ. Coll. of Med., 1897	1897	1904
Ward, Jesse E., Robersonville; Univ. of Md., 1904; U.N.C.	1904	1905
Ward, Vernon Albert, Robersonville; Jeff. Med. Coll., 1908; U.N.C.	1908	1914

McDOWELL COUNTY SOCIETY

President: John F. Jonas, Marion, (Hon.); Balt. Med. Coll., 1903	1903	1903
Secretary: Lester L. Williams, Marion; Md. Med. Coll., 1913	1913	1916
Ashworth, B. L., Marion, (Hon.); P. and S., Balt., 1892	1893	1900
Butt, R. B., Marion; Emory Univ., Atlanta, 1920	1920	1921
Johnson, John B., Old Fort; Univ. Louisville Med. Dept., 1905	1914	1914
Justice, Gaston B., Marion; P. and S., Atlanta, 1907; U.N.C.	1907	1907
Kirby, Guy S., Marion, (Hon.); Univ. Coll. of Va., 1897	1896	1903
McBee, Paul, Marion; Virginia, 1930	1930	1933
McIntosh, D. M., Old Fort; Med. Coll. of Va., 1904	1907	1909
Miller, J. F., Marion; Med. Chi. Phila., 1906	1915	1919
Robinson, W. A., Old Fort; Med. Coll. of Va., 1900	1903	1930
Wood, Frank, Marion; Univ. of Pa., 1928	1931	1932
Wood, Martha, Marion; Univ. Pa., 1928	1934	1935

MECKLENBURG COUNTY SOCIETY

President: Robert L. Gibbon, Charlotte, (Hon.); Jeff. Med. Coll., 1887	1887	1888
Secretary: Geo. D., McGregor, Charlotte; Univ. of Va., 1925	1927	1928
Abernathy, H. N., Charlotte, (Hon.); Louisville Med. Coll., 1894	1894	1899
Adams, J. R., Charlotte; Univ. of Va., 1928	1932	1933
Alexander, Jas. R., Charlotte, (Hon.); Univ. of Md., 1894	1894	1899
Allan, William, Charlotte; P. and S., Balt., 1906	1906	1914
Allen, Sylvia, Charlotte; Columbia Univ., 1926	1932	1933
Ashe, J. R., Charlotte; Columbia Univ., 1911	1915	1915
Barret, H. P., Charlotte; Univ. of Louisville, 1908	1917	1919
Barron, A. A., Charlotte; Vanderbilt Univ., 1909	1910	1910
Black, Geo. Wm., Charlotte; Med. Coll. of Va., 1924	1924	1925
Blair, Andrew, Charlotte; U. of Pa., 1924	1925	1926
Bost, T. C., Charlotte; Geo. Washington Univ., 1915	1920	1921
Bradford, W. Z., Charlotte; Univ. of Pa., 1928	1928	1930
Brenizer, A. G., Jr., Charlotte; Johns Hopkins, 1908, and Univ. of Heidelberg; U.N.C.	1911	1911
Britt, C. S., Charlotte; Emory Univ., 1920	1925	1926
Buckner, Margaret, Charlotte; Med. Coll. of Va., 1929	1929	1932
Bunch, Charles, Charlotte; U. S. C., 1931	1931	1935
Chambers, P. J., Charlotte; Jeff. Med. Coll., 1929	1932	1933
Choate, A. B., Charlotte; Med. Coll. of Va., 1929	1929	1933
Craven, Thomas, Huntersville; Jeff. Med. Coll., 1917; U.N.C.	1917	1918
Craven, W. W., Charlotte; Univ. of Md., 1903; U.N.C.	1904	1904
Crowell, Andrew J., Charlotte, (Hon.); Univ. of Md., 1893	1892	1894
Davidson, John E. S., Charlotte, (Hon.); Univ. of Md., 1898	1898	1898
Davis, Stephen W., 501 Professional Bldg., Charlotte, N. C.; Univ. of Pa. Med. School, 1927; U.N.C.	1927	1929

Name and Address	Licensed	Joined State Society
Davis, T. M., Charlotte; Univ. of Md., 1914	1931	1933
De Armon, J. McC., 4 McKinnon Bldg., Charlotte, (Hon.); Univ. of Md., 1886	1886	1887
Elliott, J. A., Charlotte; Univ. of Mich., 1914	1919	1920
Faison, Elias, Charlotte; Emory Univ., 1929	1929	1933
Faison, Yates W., Charlotte; Harvard Univ., 1910	1910	1912
Ferguson, R. T., Charlotte; Univ. Coll. of Va., 1906	1909	1909
Fleming, L. E., Charlotte; Univ. of Pa., 1931	1931	1934
Franklin, Ernest W., Charlotte; Univ. of Pa., 1930; U.N.C.	1930	1932
Gage, L. G., Charlotte; Univ. of Va., 1915	1921	1922
Gallant, Robert M., Charlotte; N. C. Med. Coll., 1915	1915	1916
Gaul, John Stuart, Charlotte; Medico-Chir., Phila., 1913	1922	1923
Gibbon, James W., Charlotte; Jeff. Med. Coll., 1918	1920	1921
Hamer, W. A., Chadwick Station, Charlotte; Univ. of Md., 1930	1930	1932
Hand, Edgar H., Charlotte; N. C. Med. Coll., 1907	1907	1913
Hart, V. K., Charlotte; Univ. of Pa., 1921	1924	1925
Hipp, Edw. R., Charlotte; Univ. of Va., 1918	1920	1921
Houser, O. J., Charlotte; N. C. Med. Coll., 1914	1914	1916
Hovis, L. W., Charlotte; N. C. Med. Coll., 1904; U.N.C.	1904	1906
Hunt, J. S., Charlotte; Vanderbilt Univ., 1929	1932	1933
Hunter, W. Myers, Charlotte; Georgetown Univ., 1905	1906	1908
Johnston, J. G., Charlotte; Med. Dept., Vanderbilt Univ., 1899	1913	1916
Kelly, Luther W., Charlotte; Univ. of Va., 1924	1926	1927
Kennedy, John P., Charlotte; Jeff. Med. Coll., 1915	1915	1920
King, Parks M., Charlotte, (Hon.); Bellevue Med. Coll., 1902	1902	1904
Kremer, C. E., Jr., Charlotte; Harvard Univ., 1929	1931	1932
Lafferty, Robert H., Charlotte; N. C. Med. Coll., 1906	1906	1908
Leinbach, Robt. F., Charlotte; Univ. of Pa., 1907; U.N.C.	1907	1910
Lucas, Chas. De Forrest, Charlotte; Univ. Va., 1926	1934	1935
MacConnell, John W., Davidson; Univ. of Md., 1907	1908	1909
McCoy, Thos. M., Charlotte; N. C. Med. Coll., 1905	1906	1910
McKay, Hamilton W., Charlotte; N. C. Med. Coll., 1909; Jeff. Med. Coll., 1910	1911	1913
McKay, Robert W., Charlotte; Johns Hopkins, 1923	1928	1928
McKnight, R. B., Charlotte; Univ. of Pa., 1920	1920	1928
McLaughlin, Calvin S., Charlotte, (Hon.); Univ. of Md., 1896	1896	1903
McPhail, L. D., Charlotte; Univ. of Md., 1900; U.N.C.	1900	1902
McPheeters, S. B., Charlotte; Washington Univ., 1906	1933	1934
Martin, Wm. F., Charlotte; Univ. of Md., 1920	1920	1923
Martin, W. J., Richmond, Va.; Univ. of Va., 1890	1891	1919
Matheson, James P., Charlotte; Univ. of Md., 1905	1902	1907
Mathews, Vann M., Charlotte; Univ. of Pa., 1918	1918	1921
Maudlin, Paul R., Charlotte; N. Y. Univ., 1932	1932	1934
Mayer, W. B., Charlotte; Univ. of Pa., 1930	1932	1933
Miller, Oscar L., Charlotte; Atlanta Coll. of P. and S., 1912	1921	1922
Moore, Oren, Charlotte; N. C. Med. Coll., 1911	1911	1912
Moore, R. A., Charlotte; Univ. of Pa., 1923	1924	1925
Motley, Fred Elliot, Charlotte; Univ. of Mich., 1922	1926	1927
Munroe, H. Stokes, Charlotte; N. C. Med. Coll., 1902; Jeff. Med., 1903	1902	1904
Munroe, J. P., Charlotte, (Hon.); Univ. of Va., 1885	1886	1890
Myers, Alonzo, Charlotte; N. C. Med. Coll., 1911; Bellevue Hosp. Med. Coll., 1916	1911	1920
Myers, John Q., Charlotte, (Hon.); N. C. Med. Coll., 1904	1904	1904

Name and Address	Licensed	Joined State Society
Nalle, B. C., Charlotte, (Hon.); Univ. of Va., 1903	1905	1905
Nance, C. L., Charlotte; N. C. Med. Coll., 1919	1921	1922
Neblett, H. C., Charlotte; Med. Coll. of Va., 1914	1921	1929
Newell, Leon B., Charlotte; Univ. of N. C., 1905; U.N.C.	1905	1908
Newton, Howard L., Charlotte; Northwestern Univ., 1921	1923	1924
Nisbet, D. Heath, Charlotte; Harvard Med. Dept., 1917	1917	1920
Nisbet, Walter O., Charlotte, (Hon.); Med. Coll. of S. C., 1889	1889	1889
Northington, J. M., Charlotte; Med. Coll. of Va., 1905	1909	1909
Nowlin, Preston, Charlotte; Univ. of Va., 1924	1929	1930
Patterson, Reid, Charlotte; N. C. Med. Coll., 1912	1912	1913
Peeler, Clarence N., Charlotte; N. C. Med. Coll., 1906	1906	1908
Petteway, George H., Charlotte; N. C. Med. Coll., 1913	1913	1914
Phillips, C. C., Charlotte; N. C. Med. Coll., 1912	1912	1917
Pressly, Geo. W., Charlotte, (Hon.); Jeff. Med. Coll., 1892	1895	1896
Rankin, Watson S., Charlotte, (Hon.); Univ. of Md., 1901	1901	1901
Ranson, J. Lester, Charlotte; N. C. Med. Coll., 1911	1911	1912
Ray, F. L., Charlotte; Univ. of Va., 1919	1919	1922
Robinson, C. W., Charlotte; Univ. of Pa., 1930; U.N.C.	1930	1932
Ross, Otho B., Charlotte; Univ. of Pa., 1909	1909	1912
Ross, Thos. W., Charlotte; Grad. Jeff. Med. Coll., 1927	.....	1930
Sasser, T. J., Charlotte; Univ. Ga. Med. Dept., 1926	1929	1929
Scruggs, W. Marvin, Charlotte; Univ. of Pa., 1914	1914	1920
Shirley, H. C., Charlotte; Johns Hopkins, 1918	1921	1922
Shull, J. Rush, Charlotte; Univ. of Pa.; U.N.C., 1910	1910	1913
Sloan, H. L., Charlotte; Univ. of Pa., 1911	1913	1914
Smith, F. C., Charlotte; Jeff. Med., 1921; U.N.C.	1921	1925
Sparrow, Thos. De L., Charlotte; Univ. of Pa., 1920	1920	1923
Squires, Claude B., Charlotte; Jeff. Med. Coll., 1919; U.N.C.	1919	1921
Taylor, H. C., Charlotte, Chadwick Sta.; Tenn. Med., 1886	1910	1915
Thompson, S. R., Charlotte; N. C. Med. Coll., 1914	1914	1915
Todd, L. C., Charlotte; Univ. of Mich., 1918	1920	1920
Tucker, John H., Charlotte; Univ. of Va., 1899	1901	1911
Tydeman, F. W. L., San Francisco, Calif.; N. C. Med. Coll., 1912	1912	1918
Townsend, M. L., Washington, D. C.; Indiana Med. Coll., 1906	1912	1913
Wakefield, Harry A., Charlotte; N. C. Med. Coll., 1908	1908	1911
Wannamaker, Edward J., Jr., Charlotte; Univ. of Pa., 1921	1924	1924
Ward, W. C., Pineville; Univ. of Louisville	1931	1934
Whisnant, Albert M., Charlotte, (Hon.); P. and S., Balt., 1893	1893	1899
White, Thomas Preston, Charlotte; Univ. of Pa., 1922	1924	1925
Winkler, Harry, Charlotte; Rush Med. Coll., 1929	1931	1931
Wishart, Wm. E., Charlotte; N. C. Med. Coll., 1911	1911	1911

MITCHELL COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Gouge, A. E., Bakersville; Med. Coll. of Va., 1917	1917	1920
Peterson, C. A., Spruce Pine; N. C. Med. Coll., 1907	1907	1908

MONTGOMERY COUNTY SOCIETY

President: Tiffany Barnes, Star; Med. Coll. of Va., 1925	1925	1927
Secretary: Charles Daligny, Troy, (Hon.); Univ. of Paris, 1878	1889	1891
Harris, W. T., Troy; Med. Coll. of Va., 1925	1926	1927
Ingram, Charles B., Mt. Gilead, (Hon.); Jeff. Med. Coll., 1886	1886	1892

Name and Address	Licensed	Joined State Society
McMillan, J. M., Candor; P. and S., Atlanta, 1909	1909	1911
Nicholson, N. G., Jr., Mt. Gilead; N. C. Med. Coll., 1917	1917	1920
Rankin, Pressly R., Mt. Gilead; N. C. Med. Coll., 1910	1910	1912
Roberts, Marion B., Star; Univ. of Md., 1932	1934	1934
Thompson, Alexander Frank, Troy, (Hon.); Med. Coll. of Indiana, 1895; U.N.C	1895	1904

MOORE COUNTY SOCIETY

President: A. McNeil Blair, Southern Pines; Niagara Univ., 1897	1904	1906
Secretary: R. G. Rosser, Vass; N. C. Med. Coll., 1909	1909	1917
Blue, A. McN., Carthage; Tulane Univ., 1915; U.N.C	1916	1917
Bowen, J. P., Aberdeen; Univ. of Md., 1929	1932	1934
Bowman, H. E., Aberdeen; N. C. Med. Coll., 1904	1904	1919
Chester, P. J., Southern Pines; N. C. Med. Coll., 1913	1913	1920
Dickie, J. W., Southern Pines; Jeff. Med. Coll., 1918	1920	1921
Felton, R. L., Jr., Carthage; Univ. of Pa., 1927; U.N.C	1927	1929
Grier, Charles T., Carthage; N. C. Med. Coll., 1910	1912	1913
McLeod, A. H., Aberdeen, (Hon.); Balt. Med. Coll., 1896; U.N.C	1896	1904
McLeod, Vida C., Southern Pines; Baylor Univ., 1919	1931	1931
McLeod, W. G., Southern Pines; Baylor Univ., 1921	1926	1927
Marr, W. M., Pinehurst; Tufts Coll. Med. Sch., Boston, 1907	1909	1915
Milliken, J. S., Southern Pines; Jeff. Med. Coll., 1915; U.N.C	1915	1916
Monroe, C. R., Pinehurst; Univ. of Md., 1924; U.N.C	1925	1928
Mudgett, W. C., Southern Pines; Maryland Med. Coll., 1903	1908	1911
Overcash, W. E., Southern Pines; Univ. of Penna., 1926; U.N.C	1926	1934
Shields, Henry B., Carthage, (Hon.); Atlanta Med. Coll., 1882	1887	1901
Street, M. E., Glendon, (Hon.); P. and S., Balt., 1893	1893	1902
Symington, John, Carthage; Univ. of Md., 1902	1927	1928
Wilcox, J. W., West End; Univ. of N. C., 1906	1906	1906

NEW HANOVER COUNTY SOCIETY

President: A. H. Elliott, Wilmington; Jeff. Med. Coll., 1919; U.N.C.	1919	1921
Secretary: Graham B. Barefoot, Wilmington; Jeff. Med. Coll., 1923	1923	1924
Barefoot, Wm. Frederick, Wilmington; Tulane Univ., 1934	1934	1935
Bellamy, Robert H., Wilmington, (Hon.); Jeff. Med. Coll., 1902; U.N.C	1902	1902
Bulluck, Ernest S., Wilmington; Univ. of Md., 1911	1911	1911
Coddington, H. A., Wilmington; Univ. of Md., 1911	1915	1917
Cranmer, J. B., Wilmington; Univ. of N. C., 1905	1905	1907
Cranz, Oscar W., Wilmington; Med. Coll. Va., 1931	1933	1935
Crouch, A McR., Wilmington; Jeff. Med. Coll., 1916; U.N.C	1916	1918
Crumpler, James Fulton, Wilmington; Bellevue Hosp. Med. Sch., 1930	1930	1935
Evans, J. E., Wilmington; Univ. of Md., 1916	1916	1916
Farthing, L. E., Wilmington; Univ of N. C., 1906	1906	1913
Fay, Oliver Frederick, Wilmington; Med. Coll. Va., 1930	.....	1935
Freeman, J. D., Wilmington; Med. Coll. of Va., 1918	1921	1922
Galloway, Walter Curtis, Wilmington, (Hon.); Washington Univ., 1874	1880	1880
Hall, James S., Wilmington; Univ. of S. Calif., 1900	1921	1924
Hare, R. B., Wilmington; Med. Coll. of S. C., 1930	1933	1934
Harriss, Andrew H., Wilmington, (Hon.); Medico-Chir., Phila., 1893	1894	1894
Hoggard, J. T., Wilmington; Univ. Med. Coll., Rich., 1906	1906	1922
Hooper, Joseph W., Wilmington; Univ. of Md., 1909	1912	1919

Name and Address	Licensed	Joined State Society
Jewett, Robert D., Wilmington, (Hon.); Univ. of Va., 1888	1890	1890
Johnson, Geo. W., Wilmington; Univ. of Pa., 1920; U.N.C.	1920	1921
Koonce, Donald, Wilmington; Univ. of Pa., 1929	1929	1934
Koonce, S. Everett, Wilmington, (Hon.); P. and S., Balt., 1896	1896	1900
Lancaster, Wm. Jesse, Wilmington; Atlanta Sch. of Med.,	1911	1935
McEachern, Duncan, Wilmington; Med. Coll. Va., 1932	1932	1935
McMillan, W. D., Wilmington, (Hon.); Univ. of Md., 1869	1889*	1892
Mebane, W. C., Wilmington; N. C. Med. Coll., 1905; U.N.C.	1905	1916
Mebane, W. C., Jr., Wilmington; Grad., 1931	1932	1934
Moore, W. Houston, Wilmington; Jeff. Med. Coll., 1910; U.N.C.	1910	1911
Murchison, D. R., Wilmington; Johns Hopkins, 1916	1922	1923
Nesbitt, Charles T., Wilmington; Balt. Med. Coll., 1893	1907	1908
Powers, Frank P., Wilmington; Univ. of Pa., 1927	1927	1928
Robertson, James F., Wilmington; Univ. of Pa., 1913	1913	1916
Rodman, R. B., Wilmington; Grad. Med. Coll. of S. C., 1928	1928	1930
Sidbury, J. B., Wilmington; Columbia Univ., N. Y., 1912	1915	1916
Sloan, D. B., Wilmington; Univ. of Pa., 1914; U.N.C.	1914	1920
Sullivan, Victor, Wilmington; Grad., 1931	1931	1934
Wessell, John C., Wilmington, (Hon.); Univ. of Md., 1900	1900	1900

NORTHAMPTON COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Cooke, Q. H., Rich Square	.....	1934
Fleetwood, Jos. A., Conway; Tulane, 1921	1921	1923
Lewis, H. W., Jackson, (Hon.); Univ. of N. Y., 1877	1889*	1887
Lister, J. L., Jackson; Med. Coll. of Va., 1896	1896	1909

ONSLOW COUNTY SOCIETY

President: J. P. Corbett, Swansboro; Wash. Univ. School of Med., 1928; U.N.C.	1928	1930
Secretary: W. I. Turlington, Jr., Jacksonville; Univ. of N. Y., 1929; U.N.C.	1929	1930
Bryan, Lorenzo D., Sneads Ferry; Tulane, 1910	1910	1911
Cox, E. L., Jacksonville, (Hon.); Univ. of Md., 1889	1889	1892
Henderson, John P., Jacksonville; Va. Med. Coll., 1918	1919	1921
Sutton, Carl W., Richlands; Tulane, 1905; U.N.C.	1905	1907

PAMLICO COUNTY SOCIETY

President: D. A. Dees, Bayboro; Balt. Med. Coll., 1903	1903	1905
Secretary: J. J. Purdy, Oriental; Med. Coll. of Va., 1900	1914	1915
Daniels, O. C., Oriental; Med. Coll. of Va., 1903; U.N.C.	1903	1916
McCotter, St. Elmo, Bayboro; P. and S., Atlanta, 1908	1908	1909

PASQUOTANK-CAMDEN-CURRITUCK-DARE COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Bulla, M. S., Elizabeth City; Miami Med. Coll., Cinn., 1905	1921	1921
Fearing, Isaiah, Elizabeth City, (Hon.); P. and S., Balt., 1896	1896	1904
Griggs, W. T., Poplar Branch, (Hon.); Univ. of Va., 1896	1896	1901
Johnston, W. W., Manteo; N. C. Med. Coll., 1913	1913	1920

* Registered.

Name and Address	Licensed	Joined State Society
Kenfield, H. W., Hatteras; Univ. of Mich., 1906	1924	1933
Mann, E. M., Moyock; Med. Coll., Va., 1931; U.N.C.	1932	1933
Peters, W. A., Elizabeth City; Med. Coll. of Va., 1915	1915	1916
Sawyer, W. W., Elizabeth City, (Hon.); Univ. of Md., 1903; U.N.C.	1903	1904
Walker, H. D., Elizabeth City, (Hon.); Univ. of Md., 1902	1902	1902
Ward, I. A., Elizabeth City; Univ. of N. C., 1907	1907	1915
White, W. H. C., Elizabeth City; Univ. of Va., 1922	1929	1929
Williams, Claude B., Elizabeth City; Univ. Coll. Med., Richmond, 1903	1903	1907

PENDER COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Taylor, W. I., Burgaw; N. C. Med. Coll., 1902	1904	1905

PERSON COUNTY SOCIETY

President: Austin F. Nichols, Roxboro; Univ. of N. C., 1908	1908	1909
Secretary: H. M. Beam, Roxboro; Columbia Univ., 1918	1918	1919
Baynes, R. H., Hurdle Mills; Univ. Md., 1914	1914	1915
Clay, E. L., Timberlake; Univ. of Kentucky, 1929	1929	1933
Gentry, Geo. W., Roxboro; Univ. of N. C., 1910	1910	1911
Love, Bedford E., Roxboro; Univ. of Md., 1904	1904	1905
Merritt, John H., Woodsdale, Rt. 1; Univ. of N. C., 1906	1907	1908
Thaxton, B. A., Roxboro; Jeff. Med. Coll., 1914	1914	1916

PITT COUNTY SOCIETY

President: Jenness Morrill, Falkland; Univ. of Md., 1888	1888	1900
Secretary: W. K. McDowell, Greenville; Jefferson, 1931	1931	1934
Barrett, J. M., Greenville; Univ. of Pa., 1926; U.N.C.	1926	1927
Basnight, Thos. G., Stokes; Univ. of Md., 1904	1905	1907
Beasley, E. B., Fountain; Univ. of Pa. School of Med., 1911; U.N.C.	1911	1915
Brooks, F. P., Greenville; Univ. of Mich., 1933	1933	1935
Brown, W. M. B., Greenville; Med. Coll. Va., 1929	1929	1931
Crisp, S. M., Greenville; Univ. of Pa., 1923; U.N.C.	1923	1925
Dixon, G. G., Ayden; Med. Coll. of Va., 1915; U.N.C.	1915	1917
Dixon, Wm. H., Ayden, (Hon.); Med. Coll. of Va., 1901; U.N.C.	1901	1901
Ennett, N. T., Greenville	.....	1934
Frizzelle, M. T., Ayden; Univ. Coll. of Med., Richmond, 1907	1907	1909
Garrenton, Cecil, Bethel; Med. Coll. of Va., 1908	1908	1915
Haar, F. B., Greenville; Jeff. Med. Coll., 1932	1932	1935
Liverman, J. S., Winterville	.....	1934
Nobles, Jos. E., Greenville, (Hon.); Jeff. Med. Coll., 1899; U.N.C.	1899	1902
Pace, K. B., Greenville; Jeff. Med. Coll., 1914; U.N.C.	1914	1920
Skinner, Louis Cotton, Greenville, (Hon.); Univ. of Md., 1901	1901	1903
Smith, Joseph, Greenville; Med. Coll. of Va., 1914	1916	1920
Stevens, A. H., Jr., Farmville; Med. Dept. Univ. of Ga., 1932	1933	1934
Tyson, J. J., Ayden; Med. Coll. of Va., 1928	1928	1930
Ward, Needham E., Greenville; Duke Univ. Med. Coll., 1932	1934	1934
Watson, Thomas M., Greenville; Tulane Univ., 1919	1919	1920
Winstead, J. L., Greenville; Med. School of Univ. of Md., 1925; U.N.C.	1925	1930
Wooten, W. I., Greenville; Jeff. Med., 1920; U.N.C.	1920	1920
Willis, W. M., Farmville; Med. Coll. of Va., 1914	1915	1924

POLK COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: L. Rosa H. Gantt, Tryon; Med. Coll. of S. C., 1901	1927	1932
Secretary: M. C. Palmer, Tryon; Med. Coll. of S. C., 1910; U.N.C.	1911	1914
Grady, Wm. Earle, Tryon, (Hon.); Univ. of Md., and P. and S., 1894	1895	1899
Jervey, A. J., Tryon; Med. Coll. of S. C., 1905	1923	1925
Lea, J. I., Tryon; Mich. Coll. of Med. and Surg., 1906	1916	1925
Smith, D. L., Saluda and Spartanburg, S. C.; S. C. Med. Coll., 1903	1926	1927

RANDOLPH COUNTY SOCIETY

President:	.....	.....
Secretary: J. H. Soady, Asheboro; Toronto Univ., 1906	1924	1926
Barnes, Dempsey, Asheboro, Med. Coll. of Va., 1925	1925	1927
Barnes, J. T., Asheboro; Med. Coll. of Va., 1929	1929	1932
Gregg, A. D., Liberty; Med. Coll. of S. C., 1913	1927	1928
Griffin, H. L., Asheboro; Med. Coll. of Va., 1926	1926	1928
Helms, T. L., Randleman; N. C. Med. Coll., 1914	1915	1917
Hubbard, Charles C., Farmer, (Hon); Jeff. Med. Coll., 1888	1890	1900
Johnson, J. R., Ramseur; Med. Coll. of Va., 1927	1927	1929
Lambert, W. L., Asheboro; Jeff. Med. Coll., 1921; U.N.C	1921	1923
Redding, Alex. H., Cedar Falls, (Hon.); Coll. of P. and S., Balt., 1887	1889*	1900
Rudd, J. C., Randleman; Univ. Tenn., 1931	1934	1935
Sykes, R. P., Asheboro; Tulane Med. Coll., 1929	1929	1932
Tate, C. S., Ramseur; Balt. Med. College, 1893	1896	1914

RICHMOND COUNTY SOCIETY

President: W. H. Parsons, Ellerbe; N. C. Med. Coll., 1916	1916	1919
Secretary: A. C. Everett, Rockingham; Univ. of Md., 1897	1897	1903
Bristow, C. O., Rockingham; Jeff. Med. Coll., 1918	1920	1921
Caddell, G. C., Hoffman; N. C. Med. Coll., 1912	1912	1930
Dalton, B. B., Rockingham; Duke, 1932	1933	1935
Garrett, F. B., Rockingham; N. C. Med. Coll., 1912	1912	1914
Garrison, R. B., Hamlet; Univ. Md., 1933	1933	1935
Hatcher, M. A., Hamlet; Med. Coll. of Va., 1918	1920	1921
Henry, T. B., Rockingham; Columbia Univ Coll P. and S., N. Y., 1917; U.N.C	1920	1921
Howell, W. L., Ellerbe; N. C. Med. Coll., 1910	1910	1911
James, W. D., Hamlet; Jeff. Med. Coll., 1908; U.N.C	1908	1908
Kinsman, Henry F., Hamlet; Univ. of Vermont, 1894	1897	1904
Ledbetter, James McQ., Rockingham; Vanderbilt Univ., 1894; U.N.C.	1894	1903
Long, Z. F., Rockingham; Univ. of Pa., 1928; U.N.C	1928	1930
Milham, C. G., Hamlet; Grad. Jefferson, 1927	1927	1930
Terry, Wm. Calvin, Hamlet; N. C. Med. Coll., 1911	1912	1914

ROBESON COUNTY SOCIETY

President: J. N. Britt, Lumberton; Atlanta Med. Coll., 1914	1923	1924
Secretary: N. O. Benson, Lumberton; Med. Dept. Univ. of Ga., 1930	1933	1934
Allen, G. C., Lumberton; Rush Med. Coll., 1932	1933	1934
Baker, Horace M., Lumberton; Harvard Med. School, 1917	1919	1919
Beam, R. S., Lumberton; Jeff. Med. Coll., 1912; U.N.C	1912	1915
Bowman, E. L., Lumberton; Med. Coll. of Va., 1914	1914	1916

* Registered.

Name and Address	Licensed	Joined State Society
Carmichael, Thaddeus W., Rowland; Ky. Univ. Med. Dept., 1904	1911	1919
Faulk, J. G., Pembroke; Med. Coll. of Va., 1931	1931	1932
Hardin, E. R., Lumberton; Univ. of Ga., 1911	1915	1920
Hedgpeth, L. R., Lumberton; Univ. of Md., 1933	1933	1934
Hodgin, H. H., Red Springs; Univ. of Md., 1905; N. C. Med. Coll., 1906	1906	1907
Holmes, A. B., Fairmont; Jeff. Med. Coll., 1910	1910	1914
Johnson, C. T., Red Springs; Jeff. Med. Coll., 1920	1920	1922
Johnson, Thomas C., Lumberton, (Hon.); Med. Coll. of Va., 1903	1903	1903
Knox, John Jr., Lumberton; Univ. of Md., 1906	1907	1907
McClelland, Joseph O., Maxton; Med. Coll. of Va., 1908	1912	1913
McIntyre, Stephen, Lumberton; Jeff. Med. Coll., 1928	1928	1930
McMillan, R. D., Red Springs; Univ. of Md., 1910; U.N.C.	1911	1912
Martin, J. A., Lumberton; Med. Coll. of Va., 1915	1915	1917
Nash, J. Fred, St. Pauls; N. C. Med. Coll., 1914	1914	1916
Poole, Claude T., St. Pauls; N. C. Med. Coll., 1909	1909	1913
Pope, Henry T., Lumberton, (Hon.); N. C. Med. Coll., 1894	1893	1902
Reed, D. H., Maxton; Geo. Wash. Univ., 1901	1904	1917
Ricks, Leonard E., Fairmont, (Hon.); Med. Coll. of Va., 1896	1896	1913
Smith, John McNeill, Rowland; Jeff. Med. Coll., 1908	1908	1909
Townsend, R. G., St. Pauls; Tulane, 1927	1927	1934
Walton, G. B., Chadbourne; Tulane Univ., 1930	1930	1935

ROCKINGHAM COUNTY SOCIETY

President:	.....	.....
Secretary: B. F. Cozart, Reidsville; Med. Coll. of Va., 1931	1931	1931
Casteen, Kenan, Leaksville; Univ. of Bellevue Hosp., Med. Coll., 1918	1919	1921
Cummings, M. P., Reidsville; Jeff. Med. Coll., 1911; U.N.C.	1911	1914
Ferneyhough, W. T., Reidsville; W. of M., 1916	1926	1927
Fetzer, P. W., Madison; Univ. of Va. Dept. of Med., 1916	1916	1920
Hester, William, Reidsville; Jeff. Med. Coll., 1926; U.N.C.	1929	1930
Jett, Samuel G., Reidsville; Univ. of the South, 1903	1908	1911
Johnson, W. A., Reidsville; N. C. Med. Coll., 1907	1909	1910
McAnally, James McG., Reidsville; Univ. of Penna., 1927; U.N.C.	1927	1927
McBryde, M. H., Reidsville; Univ. Coll. of Med., Richmond, 1901	1901	1904
McGehee, John Wm., Reidsville; Univ. of Md., 1904	1904	1905
Matthews, Wm. W., Leaksville; Chicago Coll. of Med. and Surg., 1913	1915	1918
Ray, John B., Leaksville; Balt. Med. Coll., 1898	1898	1898
Ray, S. P., Leaksville; Univ. of Pa.; U.N.C.	1929	1931
Rudd, P. D., Reidsville	.....	1935
Taylor, T. G., Leaksville; Ky. Sch. of Med., 1877	1909	1910
Tyner, Carl V., Leaksville; Univ. and Bellevue Hosp. Med. Coll., N. Y., 1916	1916	1919
Tuttle, A. F., Spray; N. C. Med. Coll., 1901	1901	1907
Watson, Paul S., Madison; Med. Coll. of S. C., 1928	1928	1928
Wharton, Chas. R., Ruffin; Med. Coll. of Va., 1897	1897	1904
Wilson, N. G., Madison; N. C. Med. Coll., 1914	1914	1914

ROWAN COUNTY SOCIETY

President: Frank A. Ellis, Salisbury; Univ. of Pa., 1918	1919	1919
Secretary: J. C. Eagle, Spencer; Jeff. Med. Coll., 1923	1923	1925
Black, O. R., Landis; N. C. Med. Coll., 1914	1914	1918
Brown, Clarence E., Salisbury; N. C. Med. Coll., 1918	1920	1921

Name and Address	Licensed	Joined State Society
Brown, G. A., Mt. Ulla, (Hon.); Univ. Coll. of Med., 1897	1897	1898
Clement, Edward B., Salisbury; Jeff. Med. Coll., 1906; U.N.C.	1906	1913
Coleman, L. A., Salisbury; Univ. Alabama, 1912	1927	1935
Flemming, Giles M., Cleveland; Emory Univ., 1919	1919	1921
Frazier, J. W., Salisbury; Jeff. Med. Coll., 1924	1924	1927
Glover, F. O., Salisbury; Univ. of Pa., 1928	1931	1932
Ketchie, J. M., Salisbury; Jeff. Med., 1922	1922	1925
Lowery, J. R., Salisbury; Univ. of Md., 1904; U.N.C.	1904	1913
McCutchan, Frank, Salisbury; Univ. of Va., 1920	1927	1928
McKenzie, B. W., Salisbury; Jeff. Med. Coll., 1916	1916	1920
Marsh, Frank B., Salisbury; Jeff. Med. Coll., 1919; U.N.C.	1919	1922
Monk, Henry L., Salisbury, (Hon.); Med. Coll. of Va., 1899; U.N.C.	1899	1903
Newman, Harold H., Salisbury; Johns Hopkins, 1913	1914	1916
Peeler, John H., Salisbury, (Hon.); Univ. Coll. of Med., 1899	1899	1904
Robertson, L. H., Salisbury; Univ. of Penna, 1929; U.N.C.	1929	1931
Seay, T. W., East Spencer; Univ. of Md., 1921	1922	1924
Shafer, Irving E., Salisbury; N. C. Med. Coll., 1914	1914	1914
Sigman, Frederick G., Spencer; Univ. Med. Coll. of Va., 1909	1909	1910
Slate, Wesley C., Spencer; Univ. of Tenn., 1903	1903	1913
Spencer, Frederick B., Salisbury; Univ. of N. C., 1909	1909	1911
Stokes, Jas. Ernest, Salisbury, (Hon.); Univ. of Md., 1892	1900	1901
Tatum, Walter Lowe, Salisbury; Jeff. Med. Coll., 1922	1922	1924
West, Robert M., Salisbury, (Hon.); Med. Coll. of Va., 1900	1900	1904
Whicker, Guy E., China Grove	.....	1934
Whitfield, Wm. Cobb, Salisbury, (Hon.); Univ. of Md., 1884; U.N.C.	1884	1884
Woodson, Charles W., Salisbury; Columbia Univ., P. and S., 1904	1905	1907

RUTHERFORD COUNTY SOCIETY

President: Rupert S. Eaves, Rutherfordton; Med. Coll. Va., 1932	1932	1933
Secretary: C. F. Glenn, Rutherfordton; Univ. of Louisville	1927	1928
Bardin, R. M., Rutherfordton; Tulane Univ., 1929	1934	1935
Biggs, Montgomery H., Rutherfordton; Univ. of Penna., 1897	1907	1908
Bostic, Wm. C., Forest City; Chattanooga Med. Coll., 1899; N. C. Med. Coll., 1905	1905	1905
Bostic, W. C., Jr., Forest City; Univ. of Pa., 1926	1926	1927
Crawford, Robt. H., Rutherfordton; Johns Hopkins, 1914	1920	1921
Duncan, Amos C., Forest City; N. C. Med. Coll., 1919	1919	1920
Elliotte, Wm., Forest City; Univ. Ga., 1934	1934	1935
Gold, Charles F., Rutherfordton; Univ. of N. C., 1910	1910	1911
Harrill, L. B., Caroleen, (Hon.); Chattanooga Med. Coll., 1897	1902	1904
Head, W. T., Campobello, R. 4, S. C.; Atlanta Coll. P. and S., 1911	1911	1923
Hunt, J. F., Spindale; Univ. of Tenn., 1900	1900	1912
King, Robt. Rogers, Ellenboro; Med. Dept. Univ. of Ark.	1931	1932
Knight, H. W., Bostic; Baltimore Med. Coll., 1903	.....	1934
Logan, F. W. H., Rutherfordton; N. C. Med. Coll., 1916	1916	1919
Lovelace, Thos. C., Henrietta; N. C. Med. Coll., 1917	1920	1920
Moss, G. O., Cliffside; Emory Univ., 1927	1927	1929
Norris, Henry, Waverly Mills, S. C.; Univ. of Pa., 1897	1907	1908
Reid, George P., Forest City, (Hon.); Univ. Coll. of Med., Va., 1895	1894	1899
Rucker, Adin Adam, Rutherfordton; Univ. of Md., 1908	1908	1909
Verner, Carl Hugh, Forest City; P. and S., Atlanta, 1912	1923	1927
Wiseman, P. H., Avondale; Med. Coll. of Va., 1925	1925	1926

SAMPSON COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: O. E. Underwood, Roseboro; Univ. of Va., 1909	1909	1910
Secretary: J. Street Brewer, Roseboro; Jeff. Med. Coll., 1919	1919	1921
Crumpler, Paul, Clinton; Univ. of Tenn., 1907	1907	1908
Johnson, A. N., Garland; Univ. of Penn., 1933	.....	1933
Kerr, John D., Clinton; Univ. of Md., 1908; U.N.C.	1908	1910
Lee, J. Marshall, Newton Grove; Med. Coll. of Va., 1916	1920	1923
Matthews, James O., Clinton, R.F.D., (Hon.); Univ. Coll. of Med., Va., 1897	1897	1902
Parker, O. L., Clinton; Med. Coll. of Va., 1918	1918	1919
Royal, D. M., Salemburg; Med. Coll. of Va	1926	1928
Sessoms, E. T., Roseboro; N. C. Med. Coll., 1915	1915	1917
Sikes, Gibson L., Salemburg, (Hon.); Univ. Coll. of Med., Va., 1900; U.N.C.	1900	1902
Sloan, Wm. H., Garland; Univ. of Md., 1916; U.N.C.	1916	1920
Small, Victor R., Clinton; Ohio State Univ. Med. Coll., 1916	1920	1921
Wilson, Robert B., Newton Grove, (Hon.); Ky. School of Med., 1889	1889	1904

SCOTLAND COUNTY SOCIETY

President: F. P. James, Laurinburg; Univ. of Pa., 1916; U.N.C.	1916	1917
Secretary: Marcus B. Wilkes, Laurel Hill; N. C. Med. Coll., 1912	1923	1923
Buchanan, L. T., Laurinburg; Jeff. Med. Coll., 1913	1913	1917
Erwin, Evan A., Laurinburg; Med. Coll. of S. C., 1912	1912	1913
Gibson, John S., Gibson; Univ. of Md., 1905; U.N.C.	1905	1907
James, Albert W., Laurinburg; Jeff. Med. Coll., 1918	1918	1921
John, Peter, Laurinburg, (Hon.); Univ. of Md., 1897; U.N.C.	1897	1904
Livingston, Everett Alex, Gibson; Univ. of Md., 1912	1912	1913
Pate, James G., Gibson; Univ. of Pa., 1916; U.N.C.	1916	1917
Rackley, G. D., Wagram; Tulane, 1933	.....	1934
Summerlin, Harry, Laurinburg; S. C. Med. Coll., 1933	.....	1935

STANLY COUNTY SOCIETY

President: Lucius Victor Dunlap, Albemarle; Univ. of N. C., 1909	1909	1910
Secretary: J. S. Gaskin, Albemarle; Med. Coll. of S. C., 1925	1929	1931
Allen, Jos. A., New London, (Hon.); Univ. Coll. of Med., Va., 1901	1901	1904
Bigler, V. L., Albemarle; Univ. Pittsburgh, 1925	1926	1927
Brunson, E. P., Albemarle; Jeff. Med. Coll., 1921	1922	1934
Campbell, Jas. I., Norwood; N. C. Med. Coll.	1898	1898
Dickson, M. S., Oakboro; Med. Coll. of S. C., 1927	1927	1929
Gaskin, Lewis R., Albemarle; Med. Coll. of S. C., 1921	1924	1926
Gaskin, Madge B., Albemarle; Med. Coll. S. C., 1926	1933	1934
Hathcock, Thomas A., Norwood, (Hon.); Univ. of Md., 1893; U.N.C.	1893	1904
Hill, Wm. Isaac, Albemarle, (Hon.); Univ. of Med., and P. and S., Balt., 1897	1897	1904
Laton, James F., Albemarle; N. C. Med. Coll., 1904	1904	1910
Lentz, C. M., Albemarle; N. C. Med. Coll., 1909	1909	1910
Moore, D. Bain, Badin; Univ. Coll. of Med., Va., 1913	1913	1915
Outlaw, J. K., Albemarle; Syracuse Univ., 1923	1926	1934
Shaver, W. T., Albemarle; Univ. of Md., 1918	1920	1921
Tally, B. T., Albemarle; Jeff. Med. Coll., 1921	1921	1922

STOKES COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President:	.....	.....
Secretary:	.....	.....
Helsabeck, C. J., Walnut Cove; Univ. of Md., 1919	1919	1922

SURRY-YADKIN COUNTIES SOCIETY

President: M. A. Royal, Elkin, (Hon.); P. and S., Balt., 1885	1889*	1904
Secretary: Harry L. Johnson, Elkin; Univ. of Cinn., 1924; U.N.C.	1924	1927
Ashby, E. C., Mt. Airy; Univ. of Penna., 1914	1914	1916
Britt, T. C., Mt. Airy; Jeff. Med. Coll., 1921	1921	1925
Doughton, J. L., Sparta; Coll. P. and S., Md., 1893	1893	1935
Finney, J. R., Boonville; N. C. Med. Coll., 1910	1910	1911
Flippin, J. M., Pilot Mountain, (Hon.); Coll. P. and S., Md., 1884	1893*	1900
Flippin, Samuel T., Siloam, (Hon.); N. C. Med. Coll., 1898	1898	1898
Gambill, I. S., Elkin; N. C. Med. Coll., 1912	1912	1917
Hall, L. S., Yadkinville	.....	1930
Harding, B. H., Hamptonville; Univ. Va., 1934	1934	1935
Leak, Wharton, G., East Bend; N. C. Med. Coll., 1900	1899	1904
Lovill, Robert Jones, Mt. Airy; Univ. of Md., 1910; U.N.C.	1910	1912
Mackie, N. W., Yadkinville; Washington Univ., 1928	1928	1929
Martin, Moir S., Mt. Airy; Univ. Coll. of Med., Va., 1905	1909	1916
Mitchell, R. C., Mt. Airy; Univ. of Pa., 1919; U.N.C.	1921	1923
Parks, Hugh, Elkin; Jeff. Med. Coll., 1921; U.N.C.	1921	1928
Salmons, H. C., Elkin; N. C. Med. Coll., 1904	1904	1908
Shore, T. W., Boonville	.....	1904
Stone, William M., Dobson; N. C. Med. Coll., 1906	1906	1907
Wellborn, William R., Elkin; N. C. Med. Coll., 1905	1908	1913
Whitaker, J. Allen, Mt. Airy; Temple, 1933	1934	1935
Woltz, John L., Mt. Airy; Sou. Med. Coll., 1897	1902	1904

SWAIN COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....

TRANSYLVANIA COUNTY SOCIETY

President:	.....	.....
Secretary:	.....	.....
Newland, Chas. L., Brevard; Med. Coll. of Va., 1927	1928	1932
Osborne, Jos. E., Rosman; Med. Coll. of Va., 1930	1930	1930

UNION COUNTY SOCIETY

President: D. T. Boger, Monroe; N. C. Med., 1906	1906	1934
Secretary: C. A. Bolt, Marshville; Med. Coll. of S. C., 1926	1929	1929
Blair, M. P., Marshville; Med. Coll. of Va., 1895	1895	1895
Garren, R. H., Monroe; Univ. of Nashville, 1900	1901	1904
Goudelock, Jno. J., Monroe; Med. Coll. S. C., 1923	1924	1924
Guyton, C. L., Monroe; Med. Coll. of S. C., 1926	1926	1933
Love, William M., Monroe; N. C. Med. Coll., 1915	1915	1919
Neece, K. E., Monroe; Washington Univ., 1929	1929	1934
Ormand, J. W., Monroe; Univ. of Cinn. Coll. of Med., 1926, U.N.C.	1926	1927
Smith, G. M., Monroe; N. C. Med. Coll., 1914	1914	1919
Whims, H. C., Waxhaw; Univ. of Md., 1931	1931	1933

* Registered.

VANCE COUNTY SOCIETY

Name and Address	Licensed	Joined State Society
President: A. P. Newcombe, Henderson; Jeff. Med. Coll., 1922; U.N.C.	1922	1924
Secretary: J. H. Wheeler, Henderson; Jeff. Med. Coll., 1918; U.N.C.	1918	1920
Bass, H. H., Henderson, (Hon.); Univ. Coll. of Med., 1899	1899	1900
Bass, H. H., Jr., Henderson; Univ. of Pa.; U.N.C.	1929	1930
Fenner, Edwin F., Henderson; Univ. of Md., 1905	1906	1908
Mitchell, Z. P., Henderson; Med. Coll. of Va., 1920	1920	1921
Newell, H. A., Henderson; P. and S., Balt., 1906	1906	1906
Royster, Thomas S., Henderson; Univ. of Pa., 1916; U.N.C.	1916	1924
Upchurch, Robert T., Henderson; Jeff. Med. Coll., 1908	1908	1910

WAKE COUNTY SOCIETY

President: M. R. Gibson, Raleigh; Univ. of Md., 1905; U.N.C.	1905	1914
Secretary: N. H. McLeod, Raleigh; Univ. of Pa., 1930; U.N.C.	1930	1932
Abernethy, Claude O., Raleigh; Univ. of N. C., 1906	1906	1907
Ashby, J. W., Raleigh; Univ. of Md., 1905	1921	1922
Barbee, G. S., Zebulon; Univ. of N. C., 1910	1910	1912
Bell, Carl W., Raleigh; Coll. of P. and S., Balt., 1914	1915	1916
Braudwell, L. J., Wendell; Rush Med. Coll. of Chicago, 1933	1932	1935
Buffaloe, J. S., Garner, (Hon.); Balt. Med. Coll., 1900	1900	1904
Bugg, C. R., Raleigh; Johns Hopkins Med. Sch., 1922	1924	1925
Bulla, A. C., Raleigh; N. C. Med. Coll., 1915	1915	1918
Burt, B. W., Holly Springs, (Hon.); P. and S., Balt., 1886	1886	1904
Campbell, Alton C., Raleigh; Univ. of N. C., 1910	1910	1912
Carpenter, Coy C., Wake Forest; Syracuse Univ., 1924	1924	1927
Caviness, V. S., Raleigh; Jeff. Med. Coll., 1921; U.N.C.	1921	1925
Caviness, Zebulon M., Raleigh, (Hon.); Univ. of N. C., 1903	1903	1903
Cheek, C. E., Fuquay Springs; Univ. Coll. of Med., Va., 1912	1912	1914
Combs, Jos. J., Raleigh; Columbia Univ. of C. and P., 1926	1926	1929
Cooper, G. M., Raleigh; Univ. Coll. of Med., Richmond, 1905	1905	1904
Cozart, W. S., Fuquay Springs; Med. Coll. of Va., Rich., 1914	1914	1917
Dewar, Wm. B., Raleigh; Univ. of Pa., 1920; U.N.C.	1920	1923
Diehl, James E., Raleigh; Univ. Md., 1911	1934	1935
Eldridge, Chas. P., Raleigh; Univ. of Pa., 1926; U.N.C.	1926	1927
Finch, O. E., Raleigh; Jeff. Med. Coll., 1915; U.N.C.	1915	1917
Flowers, C. E., Zebulon; Med. Coll. of Va., 1913; U.N.C.	1915	1916
Flowers, Clarence A., Wendell; P. and S., Balt., 1905	1907	1910
Fox, P. G., Raleigh; Med. Coll. of Va., 1922	1923	1929
Freeman, R. H., Raleigh; Jeff. Med. Coll., 1908	1908	1919
Goodwin, O. S., Apex; Jeff. Med. Coll., 1923; U.N.C.	1923	1926
Greene, Phares Yates, Raleigh; Northwestern Univ., 1933	1932	1934
Hall, W. D., Raleigh	.....	1934
Hamilton, John H., Raleigh; Med. Sch. of Harvard, 1916	1926	1926
Haywood, Hubert B., Jr., Raleigh; Univ. of Pa., 1909	1909	1910
Herring, E. H., Raleigh; Univ. of Pa., 1930	1930	1934
Hester, Jos. R., Wendell; Univ. of N. C., 1910	1910	1912
Hicks, V. M., Raleigh; Jeff. Med. Coll., 1918; U.N.C.	1918	1921
Hill, M. D., Raleigh; Med. Coll. of Va., 1928	1928	1931
Horton, M. C., Raleigh; Univ. Coll. of Med., Va., 1903	1911	1911
Horton, W. C., Raleigh, (Hon.); P. and S., Balt., 1897	1896	1904
Hunter, J. P., Cary; Jeff. Med. Coll., 1919	1919	1921
Jones, Carey C., Apex; Jeff. Med. Coll., 1920	1920	1923

Name and Address	Licensed	Joined State Society
Judd, Eugene C., Raleigh; Univ. of Pa., 1911; U.N.C.	1911	1912
Judd, James M., Varina, (Hon.); Balt. Med. Coll., 1897	1897	1901
King, E. S., Wake Forest; Jeff. Med. Coll., 1927	1927	1930
Kitchin, Thurman D., Wake Forest; Jeff. Med .Coll., 1908	1908	1908
Knox, Augustus W., Raleigh, (Hon.); Bellevue Hosp. Med. Coll., 1874	1878	1880
Knox, J. C., Raleigh; Univ. of Md., 1924	1924	1932
Lamm, Isaac W., Raleigh, (Hon.); Univ. Coll. of Med., Va., 1899	1899	1900
Lane, Bessie, Raleigh; Women's Med. Coll. of Pa., 1921	1921	1926
Lawrence, B. J., Raleigh; Jeff. Med. Coll., 1918; U.N.C.	1918	1920
Liles, L. C., Raleigh; Med. Coll. of Va., 1930; U.N.C.	1930	1933
Lowery, E. F., Raleigh; Univ. of Louisville, 1917	.....	1934
McDowell, F. C., Zebulon; Univ. of Pa., 1902	1913	1916
McGee, James Wm., Raleigh, (Hon.); Bellevue Hosp. Med. Coll., 1888	1888	1888
McGee, Robert L., Raleigh; Univ. of Penn., 1932	1932	1935
McKee, John S., Raleigh; Univ. of Md., 1907	1908	1909
Mackie, Geo. C., Wake Forest; Univ. of Pa., 1928	1928	1932
Mitchener, J. S., Raleigh; Johns Hopkins Univ., 1915	1915	1918
Neal, Kemp P., Raleigh; Harvard, 1917	1920	1921
Neal, Paul N., Raleigh; Harvard, 1919	1920	1921
Noble, R. P., Raleigh; Univ. of N. C., 1907	1907	1916
Oliver, A. S., Raleigh; Jeff. Med. Coll., 1914; U.N.C.	1914	1919
Owen, J. F., Dix Hill, Raleigh; Jeff. Med. Coll.	1920	1927
Pendleton, A. S., Raleigh	.....	1935
Proctor, I. M., Raleigh; Univ. of N. C., 1913; Univ. of Pa., 1915	1915	1917
Rand, E. G., Raleigh; Univ. of Pa., 1926	1926	1929
Ray, O. L., Raleigh, (Hon.); Univ. Coll. of Med., Richmond, 1899	1899	1904
Richardson, W. P., Raleigh; Med. Coll. of Va., 1928	1928	1932
Rogers, Jas. Rufus, Raleigh, (Hon.); P. and S., Balt., 1886	1886	1904
Root, Aldert S., Raleigh; Univ. of Pa., 1911	1911	1913
Royster, Hubert A., Raleigh, (Hon.); Univ. of Pa., 1894	1894	1895
Ruark, R. W., Raleigh; Univ. Pa., 1931	1931	1934
Smith, Sidney, Prof. Bldg., Raleigh; Tulane Univ., 1925	1925	1930
Stimpson, R. T., Raleigh; Univ. of Pa., 1927; U.N.C.	1927	1929
Strickland, W. M., Wendell; Med. Coll., Va., 1919	1921	1923
Thompson, Hugh A., Raleigh; Univ. of Pa., 1914	1914	1917
Turner, H. G., Raleigh; Univ. of Pa., 1906; U.N.C.	1907	1925
Vann, H. M., Wake Forest; Jeff. Med. Coll., 1917	1920	1923
Ward, W. T., Raleigh; Univ. of Md., 1925	1925	1927
Watson, John B., Raleigh; Univ. of N. C., 1908	1908	1909
Weathers, R. R., Knightdale; Richmond Med. Coll.	1926	1928
West, Louis N., Raleigh; Jeff. Med. Coll., 1912; U.N.C.	1912	1915
Wilkerson, Charles B., Raleigh; Univ. of N. C., 1906	1906	1908
Wilkins, R. B., Raleigh; N. C. Med. Coll., 1913	1913	1915
Wilkinson, C. P., Wake Forest; Tulane Univ., 1922	1922	1923
Wilkinson, R. W., Jr., Wake Forest; Tulane Univ., 1922	1923	1924
Winston, P. H., State Hospital, Raleigh; Med. School of Va., 1929; U.N.C.	1929	1930
Wright, J. B., Raleigh, (Hon.); Univ. Coll. of Med., Va., 1899; U.N.C.	1899	1900
Yarborough, Frank R., Cary; University of Penn., 1923; U.N.C.	1925	1926

WARREN COUNTY SOCIETY

President: C. H. Peete, Warrenton; Univ. of Pa., 1903	1906	1911
Secretary: G. H. Macon, Warrenton; Univ. Coll. of Med., Va., 1910; U.N.C.	1910	1911

Name and Address	Licensed	Joined State Society
Foster, H. H., Norlina; Jeff. Med. Coll., 1919	1919	1923
Holt, T. J., Warrenton; Med. Coll. of Va., 1904; U.N.C.	1904	1911
Hunter, Frank P., Warrenton; Univ. of Va., 1925; U.N.C.	1925	1927
Rodgers, W. D., Jr., Warrenton; Jeff. Med. Coll., 1913	1913	1915

WATAUGA-ASHE COUNTIES SOCIETY

President:	.....	.....
Secretary:	.....	.....
Hagaman, J. B., Boone; 1915	1915	1915
Jones, D. C., Lansing; Univ. of Pa., 1927	1930	1930
Jones, T. Lester, Lansing; Va. Med. Coll., 1909; U.N.C.	1909	1917
Perry, H. B., Boone; N. C. Med. Coll., 1905	1905	1922
Reeves, B. E., West Jefferson; P. and S., Balt., 1891	1891	1924
Tugman, B. W., West Jefferson	1914	1917

WAYNE COUNTY SOCIETY

President: Donnell B. Cobb., Goldsboro; Univ. of Pa., 1921; U.N.C.	1921	1926
Secretary: C. E. Howard, Goldsboro; Univ. of Pa., 1925; U.N.C.	1925	1927
Allen, A. L., Goldsboro; S. C. Med. Coll., 1933	1934	1935
Best, D. E., Goldsboro; Univ. of Md., 1924	1924	1926
Bizzell, M. E., Goldsboro; Tulane Univ., 1923	1923	1925
Cobb, W. H., Jr., Goldsboro, (Hon.); Jeff. Med. Coll., 1889	1889	1890
Crawford, W. J., Goldsboro; Med. Coll. of Va., 1922	1922	1923
Dale, G. C., Goldsboro; Univ. of Pa., 1925; U.N.C.	1925	1927
Ham, Clem, Goldsboro; Med. Coll. of S. C., 1926	1929	1930
Harrell, L. J., Goldsboro; Univ. of Md., 1930	1930	1934
Henderson, C. C., Mt. Olive; Univ. of Md., 1914; U.N.C.	1914	1919
Irwin, Henderson, Eureka; Univ. of Md., 1912	1914	1916
Ivey, H. B., Goldsboro; Univ. Coll. of Med., Richmond, 1911	1911	1917
Linville, W. C., Goldsboro; Univ. of Md., 1903; U.N.C.	1903	1923
McCuiston, A. M., Mount Olive; N. C. Med. Coll., 1911	1911	1917
Miller, Robert B., Goldsboro, (Hon.); Med. Coll. of Va., 1898; U.N.C.	1900	1902
Oliver, Robert D., Goldsboro; Univ. of Md., 1930	1930	1932
Person, Edgar Cooper, Pikeville; Med. Coll. of Va., 1905	1905	1908
Reeves, G. F., Goldsboro; Med. YSC, 1925	.....	1930
Rose, David J., Goldsboro; Tulane Univ., 1922; U.N.C.	1922	1924
Rose, James, Pikesville	.....	1931
Smith, Wm. H., Goldsboro; Univ. of Pa., 1906; U.N.C.	1907	1912
Strosnider, Charles F., Goldsboro; Univ. of Md., 1909	1910	1913
Sutton, William G., Seven Springs; Jeff. Med. Coll., 1889	1889	1896
Warrick, L. A., Goldsboro; Geo. Washington Univ., 1923	1923	1924
Whelpley, Frank L., Goldsboro; Missouri Univ., 1902	1918	1918
Wilkins, J. W., Mount Olive; Med. Coll. of Va., 1913; U.N.C.	1913	1917
Woodard, A. G., Goldsboro; Univ. of N. C., 1907	1907	1909
Zealy, A. H., Jr., Goldsboro; Harvard, 1930	1932	1934

WILKES-ALLEGHANY COUNTIES SOCIETY

President: Fred C. Hubbard, North Wilkesboro; Jeff. Med. Coll., 1918; U.N.C.	1919	1921
Secretary: James H. McNeill, North Wilkesboro; Geo. Wash. Univ. Med. School, 1926	1926	1927
Gilreath, Frank H., N. Wilkesboro, (Hon.); Univ. of Nashville, 1898	1898	1898
Hutchens, E. M., North Wilkesboro; N. C. Med. Coll., 1896	1896	1904

Name and Address	Licensed	Joined State Society
Long, L. L., Laurel Springs; Lincoln Memorial Univ., 1916	1916	1934
Miles, Walter W., Champion; Univ. of Tenn. Med., 1931	1933	1934
Mitchell, G. T., Wilkesboro; Jeff. Med. Coll., 1927; U.N.C.	1927	1928
Sink, C. S., North Wilkesboro; N. C. Med. Coll., 1912	1912	1913
Smith, Harold Benj., North Wilkesboro; Med. Coll. of S. C.	1929	1930
Triplett, W. R., Purlear; N. C. Med. Coll., 1914	1915	1920

WILSON COUNTY SOCIETY

President: Charles S. Eagles, Saratoga; Univ. of N. C., 1909	1909	1910
Secretary: C. E. Simons, Wilson; 1930	1930	1935
Anderson, Wade H., Wilson; Univ. of Va., 1902	1904	1904
Bell, G. E., Wilson; Jeff. Med. Coll., 1921	1921	1922
Best, Henry B., Wilson; Univ. of N. C., 1907	1907	1908
Blackshear, T. J., Wilson; Emory Univ., 1914	1923	1924
Clark, Badie T., Wilson; Univ. Ga., 1930	1934	1935
Darden, D. B., Stantonsburg; Univ. of Pa., 1921; U.N.C.	1924	1926
Davis, F. M., Wilson; Harvard Med. Sch., 1930	1934	1935
Dickinson, Elijah T., Wilson, (Hon.); Med. Coll. of Va., 1895	1895	1900
Fike, Ralph L., Wilson; Med. Coll. S. C., 1932	1933	1934
Grady, Leland V., Wilson, Rt. 2; N. C. Med. Coll., 1913	1913	1914
Hackney, Ben H., Lucama; Tulane Univ., 1911; U.N.C.	1911	1913
Hunter, W. C., Wilson; Univ. of Pa., 1928; U.N.C.	1928	1931
McClees, E. C., Elm City; Med. Coll. of Va., 1917	1920	1920
Mitchell, G. W., Wilson; Univ. of Coll. Med., Va., 1913	1913	1920
Moore, Chas. E., Wilson, (Hon.); Bellevue Hosp. Med. Coll., 1875	1875	1875
Mullen, Malcolm P., Wilson; Emory Univ. Med. School, 1927	1927	1928
Pittman, M. A., Wilson; Jeff. Med. Coll., 1921	1924	1923
Putney, R. H., Elm City; Med. Coll. of Va., 1914	1914	1920
Saliba, Michael M., Wilson; Balt. Med. Coll., 1897	1910	1910
Smith, F. G., Wilson; Univ. Ga. Med. Dept., 1922	1927	1931
Smith, A. Jones, Black Creek; Univ. of Pa., 1921; U.N.C.	1921	1923
Strickland, Ernest L., Wilson; Med. Coll. of Va., 1916	1916	1917
Williams, Albert F., Wilson, (Hon.); Univ. of Md., 1901; U.N.C.	1901	1904
Willis, H. C., Wilson; P. & S., Memphis, 1911	1916	1924
Woodard, B. L., Kenly; Univ. of Md., 1933	.....	1935
Woodard, C. A., Wilson; Univ. of Va., 1904	1904	1920
Woodard, G. B., Wilson; Med. Coll. of Va., 1915	1915	1916

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President:	.....	.....
Secretary:	.....	.....
Bennett, W. L., Bald Creek	.....	1933
Cheadle, C. M., Burnsville; Keokuk Med. Coll., 1898	1919	1921
Gibbs, J. B., Burnsville; Tenn Med. Coll., 1900; and N. C. Med. Coll., 1904	1904	1919
McLean, I. N., Burnsville	.....	1927

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